



Quality Control in the Food Industry

» Modality: online

» Duration: 3 Months

» Certificate: TECH Global University

» Credits: 18 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/nutrition/postgraduate-diploma/quality-control-food-industry

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tech 06 | Introduction

Quality control of processes and products is essential to ensure food safety and guarantee the safety of the processes carried out in the food industry It is therefore important for professionals in the sector to specialize in this area, which covers the entire animal food production chain. This makes it mandatory for all food industries to have a food safety plan.

Furthermore, the food crises that have occurred in recent decades at European and world levels have demonstrated the need for systems to identify, locate and withdraw products that could represent a food safety risk and a danger to the health of the population. This program also covers the integral management of food safety, covering all the aspects required to specialize in this field and start working in an industry that has a high demand for professionals.

The teaching staff on this Postgraduate Diploma are university professors and professionals from various disciplines in primary production, 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 defense and and food fraud/food authenticity).

This course has been designed to respond to the demand of diverse professional profiles and disciplines. Additionally, it is focused on understanding and learning technical, management and project execution competencies, as well as the development of skills required by a competitive, innovative and modern food sector. It is an educational project whose purpose is to specialize high-quality professionals. A program designed by experts in the field that will train graduates to meet the challenges they face in their day-to-day work.

This **Postgraduate Diploma in 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 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
- » News on Quality Control in Food Industries
- » Practical exercises where self-assessment can be used to improve learning
- » Its special emphasis on innovative methodologies in Quality Control in Food Industries
- » Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work
- » Content that is accessible from any fixed or portable device with an Internet connection



TECH's educational project seeks to specialize high-quality professionals; do not hesitate to enroll in this Postgraduate Diploma if you want to achieve just that"

Introduction | 07 tech



This Postgraduate Diploma is the best investment you can make in selecting a refresher program to update your knowledge of Quality Control in the Food Industry"

The teaching staff includes professionals belonging to the field of nutrition, who contribute their work 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 our students 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 created by renowned and extensively experienced experts in sports nutrition.

You can be the next to take charge of consumer health by developing the basis for hygiene and traceability in the production of raw materials.

This 100% online Postgraduate Certificate will allow you to balance your studies with your work. You will be able to study from any device with an internet connection whenever you choose.







tech 10 | Objectives



General Objectives

- » Develop the basis for good hygiene and traceability practices in the production of raw materials
- » Specify the applicable regulations concerning primary animal production, as well as the internal audit and certification systems
- » Define sustainable development 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
- » Analyze the fundamentals, requirements, regulations and main tools used in the traceability of the different points of the food chain
- » Analyze the system for establishing a relationship between the food product and the origin of its components, the manufacturing process and distribution
- » Evaluate food industry processes to identify those items that do not meet specific requirements to ensure food safety and consumer health
- » Develop the basis for the application of the different phases of the traceability system in food sector companies





Specific Objectives

Module 1. Traceability of Raw Materials and Consumables

- » Establish the basic principles of food safety
- » Compile the reference databases on applicable food safety regulations
- » Develop relevant aspects in the production of food of animal origin and its derivatives
- » Establish the basis for animal welfare from breeding to slaughter
- » Specify the mechanisms for internal auditing and certification of primary production.
- » Analyze foods of differentiated quality and the certification system for these products
- » Assess the impact of the agri-food industry on the environment
- » Examine the contribution of this industry to the sustainable development goals

Module 2. Analytical and Instrumental Techniques in Process and Product Quality Control

- » 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
- » 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

Module 3. Logistics and Batch Traceability

- » Define the background of logistics and traceability
- » Examine the different types of traceability and scope of application
- » Analyze the principles, requirements and measures of food legislation in the context of traceability
- » Establishing the scope of application of traceability in its mandatory nature
- » Analyze the different traceability and lot identification systems
- » Identify and define the responsibility of the different actors in the food chain in terms of traceability
- » Describe the structure and implementation of a traceability plan
- » Identify and discover the main tools for the identification of batches
- » Establish procedures for locating, immobilizing and recalling products in case of incidents
- » Identify, analyze and explain the logistics process at each point of the food chain





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, John

- · 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"

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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

Dr. Colina Coca, Clara

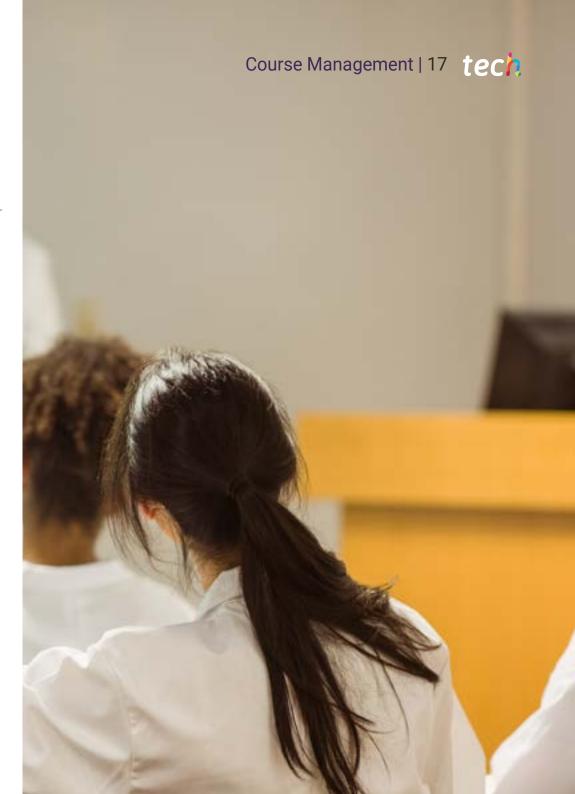
- » Collaborating Professor at the UOC. Since 2018
- » Doctorate in Nutrition, Food Science and Technology
- » Master's Degree in Food Quality and Safety: APPCC Systems
- » Postgraduate in Sports Nutrition

Ms. Escandell Clapés, Érica

- » Head of the Food Quality and Safety Department of the meat industry SUBIRATS GROUP (2015 - present).
- » Bachelor's Degree in Food Science and Technology. (University of Vic)
- » Master's Degree in Food Development and Innovation
- » Diploma in Human Nutrition and Dietetics

Dr. Moreno Fernández, Silvia

- » Postdoctoral Researcher. Autonomous University of Madrid. Since 2019
- » PhD in Food Science (Autonomous University of Madrid)
- » Degree in Biology from the Complutense University of Madrid. Specialized in the development of novel foods and the treatment of by-products from the food industry







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Module 1. Traceability of Raw Materials and Consumables

- 1.1. Basic Principles of Food Safety
 - 1.1.1. Main Objectives of Food Safety
 - 1.1.2. Basic Concepts
 - 1.1.3. Traceability Concept and Application in the Food Industry
- 1.2. General Hygiene Plan
 - 1.2.1. Basic Concepts
 - 1.2.2. Types of General Hygiene Plans
- 1.3. Primary Animal Food Production
 - 1.3.1. Basic Aspects and Animal Welfare
 - 1.3.2. Breeding and Feeding
 - 1.3.3. Transport of Live Animals
 - 1.3.4. Animal Slaughter
- 1.4. Primary Production of Animal Derivatives. Distribution of Raw Materials
 - 1.4.1. Milk Production
 - 1.4.2. Poultry Production
 - 1.4.3. Distribution of Raw Materials of Animal Origin
- 1.5. Primary Production of Plant-Based Foodstuffs
 - 1.5.1. Basic Aspects
 - 1.5.2. Types of Vegetable Crops
 - 1.5.3. Other Agricultural Products
- 1.6. Good Practices in Plant Production. Use of Phytosanitary Products
 - 1.6.1. Sources of Contamination of Vegetable Foods
 - 1.6.2. Transport of Raw Materials of Plant Origin and Risk Prevention
 - 1.6.3. Use of Phytosanitary Products
- 1.7. Water in the Agri-Food Industry
 - 1.7.1. Livestock
 - 1.7.2. Agriculture
 - 1.7.3. Aquaculture
 - 1.7.4. Water for Human Consumption in Industry





Structure and Content | 21 tech

- .8. Audit and Certification of Primary Production
 - 1.8.1. Official Control Audit Systems
 - 1.8.2. Food Certifications
- 1.9. Foods of Differentiated Quality
 - 1.9.1. Protected Designation of Origin (PDO)
 - 1.9.2. Protected Geographical Indication (PGI)
 - 1.9.3. Traditional Specialty Guaranteed (TSG)
 - 1.9.4. Optional Quality Terms
 - 1.9.5. Use of Plant Varieties and Animal Breeds
 - 1.9.6. Organic Agriculture and Livestock
- 1.10. Food Industry and Environment
 - 1.10.1. Sustainable Development Goals (SDGs)
 - 1.10.2. Solutions Proposed by the Agri-Food Industry
 - 1.10.3. Genetically Modified Organisms as a Path to Sustainable Development

Module 2. Analytical and Instrumental Techniques in Process and Product Quality Control

- 2.1. Laboratory Types, Regulations and Standards
 - 2.1.1. Reference Laboratories
 - 2.1.1.1. European Reference Laboratory
 - 2.1.1.2. National Reference Laboratories
 - 2.1.2. Food Laboratory
 - 2.1.3. Regulations and Standards Applicable to Laboratories (ISO/IEC 17025)
 - 2.1.3.1. General Requirements for Laboratory Competence
 - 2.1.3.2. Equipment Testing and Calibration
 - 2.1.3.3. Implementation and Validation of Analytical Methods
- 2.2. Official Control of the Agri-Food Chain
 - 2.2.1. PNCPA of the Agri-Food Chain
 - 2.2.2. Competent Authorities
 - 2.2.3. Legal Support for Official Control

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2.3. Official Methods of Food Analysis			2.6.	2.6. Microbiological and Physicochemical Food Analysis Techniques	
	2.3.1.	Methods of Animal Feed Analysis		2.6.1.	Preparation Techniques: Fundamentals, Instrumentation and Application in Foo
	2.3.2.	Water Analysis Methods			Processing
		2.3.2.1. Analytical Requirements According to Royal Decree 140/2003		2.6.2.	Microbiological Analysis
		2.3.2.2. Sampling Frequencies According to Type of Industry			2.6.1.2. Handling and Treatment of Samples for Microbiological Analysis
	2.3.3.	Methods of Analysis of Cereals		2.6.3.	Physical-Chemical Analysis
	2.3.4.	Methods of Analysis of Fertilizers, Residues of Phytosanitary and Veterinary			2.6.3.1. Handling and Treatment of Samples for Physical-Chemical Analysis
		Products	2.7. lr	nstrumer	ntal Techniques in Food Analysis
	2.3.5.	Methods of Analysis of Food Products		2.7.1.	Characterization, Quality Indexes and Product Conformity
	2.3.6.	Methods of Analysis of Meat Products			2.7.1.1. Food Safety / Food Integrity
	2.3.7.	Fat Analysis Methods		2.7.2.	Analysis of Residues of Prohibited Substances in Food
	2.3.8.	Methods of Analysis of Dairy Products			2.7.2.1. Organic and Inorganic Waste
	2.3.9.	Methods of Analysis of Wines, Juices and Musts			2.7.2.2. Heavy Metals
	2.3.10.	Methods of Analysis of Fishery Products			2.7.2.3. Additives
2.4.	On-Site Analytical Techniques for Fresh Food Receiving, Processing and Finished Product			2.7.3.	Analysis of Adulterant Substances in Foodstuffs
	2.4.1.	In Food Handling			2.7.3.1. Milk
		2.4.1.1. Analysis of Environments and Surfaces			2.7.3.2. Wine
		2.4.1.2. Handler Analysis			2.7.3.3. Honey
		2.4.1.3. Equipment Analysis	2.8.	Analyti	cal Techniques used in Genetically Modified Organisms (GMO) and Novel Foods
	2.4.2.	Analysis of Fresh Feed and Finished Product		2.8.1.	Concept
		2.4.2.1. Product Data Sheets		2.8.2.	Detection Techniques
		2.4.2.2. visual Inspection	2.9.	Emergi	ing Analytical Techniques to Prevent Food Fraud
		2.4.2.3. Color Charts		_	Food Fraud
		2.4.2.4. Organoleptic Evaluation According to Food Type		2.9.2.	Food Authenticity
	2.4.3.	Basic Physicochemical Analysis	2 10		ce of Certificates of Analysis
		2.4.3.1. Determination of Maturity Index in Fruit	2		In the Food Industry
		2.4.3.2. Firmness		2	2.10.1.1. Internal Reporting
		2.4.3.3. Brix Degrees			2.10.1.2. Report to Customers and Suppliers
2.5.	Nutritional Analysis Techniques				2.10.1.3. Bromatological Expert Examination
	2.5.1.	Protein Determination		2 10 2	In Reference Laboratories
	2.5.2.	Determination of Carbohydrates			In Food Laboratories
	2.5.3.	Determination of Fats			In Arbitration Laboratories
	2.5.4.	Ash Determination		۷.10.4.	III / II DILI GLIOTI L'ADDI GLOTICO

Module 3. Logistics and Batch Traceability

- 3.1. Introduction to Traceability
 - 3.1.1. Background to the Traceability System
 - 3.1.2. Traceability Concept
 - 3.1.3. Types of Traceability
 - 3.1.4. Information Systems
 - 3.1.5. Advantages of Traceability
- 3.2. Legal Framework for Traceability Part I
 - 3.2.1. Introduction
 - 3.2.2. Horizontal Legislation Related to Traceability
 - 3.2.3. Vertical Legislation Related to Traceability
- 3.3. Legal Framework for Traceability Part II
 - 3.3.1. Mandatory Application of the Traceability System
 - 3.3.2. Objectives of the Traceability System
 - 3.3.3. Legal Responsibilities
 - 3.3.4. Penalty Regime
- 3.4. Implementation of the Traceability Plan
 - 3.4.1. Introduction
 - 3.4.2. Previous Stages
 - 3.4.3. Traceability Plan
 - 3.4.4. Product Identification System
 - 3.4.5. System Test Methods
- 3.5 Product Identification Tools
 - 3.5.1. Hand Tools
 - 3.5.2. Automated Tools

3.5.1.1. EAN Bar Code

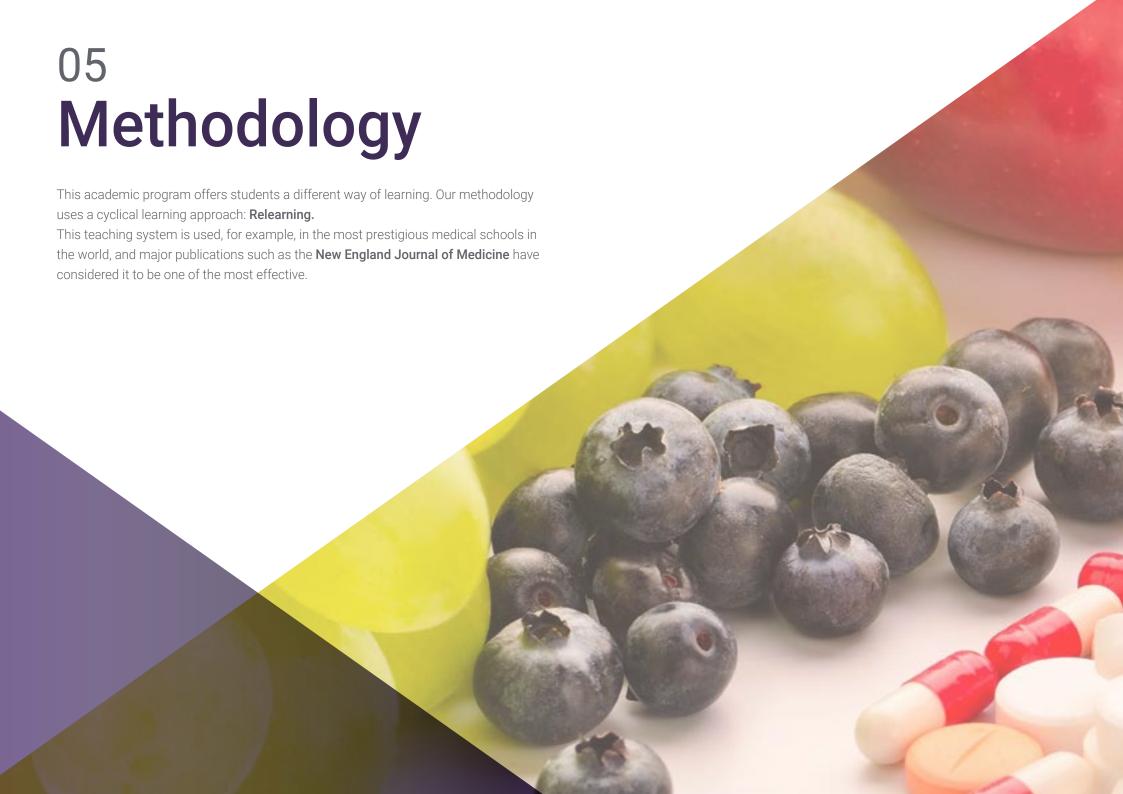
3.5.1.2 RFID/// EPC

- 3.5.3. Records
 - 3.5.3.1. Registration Identification of Raw Materials and other Materials
 - 3.5.3.2. Registration of Food Processing
 - 3.5.3.3. Final Product Identification Record
 - 3.5.3.4. Recording of the Results of Checks Performed
 - 3.5.3.5. Record Keeping Period

- 8.6. Incident Management, Product Recall and Reclamation and Customer Complaints
 - 3.6.1. Incident Management Plan
 - 3.6.2. Manage Customer Complaints
- 3.7. Supply Chain
 - 3.7.1. Definition
 - 3.7.2. Supply Chain Steps
 - 3.7.3. Supply Chain Trends
- 3.8. Logistics
 - 3.8.1. The Logistical Process
 - 3.8.2. Supply Chain vs. Logistics
 - 3.8.3. Containers
 - 3.8.4. Packaging
- 3.9. Modes and means of Transportation
 - 3.9.1. Transportation Concept
 - 3.9.2. Modes of Transport, Advantages and Disadvantages
- 3.10. Food Product Logistics
 - 3.10.1. Cold Chain
 - 3.10.2. Perishable Products
 - 3.10.3. Non-Perishable Products



Your tasks as an expert nutritionist in Quality Control in the Food Industry are essential for consumers and food chains, do not hesitate and size up your job prospects"





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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:

- 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.



tech 28 | Methodology

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.





Methodology | 29 tech

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 socioeconomic 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.

tech 30 | Methodology

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

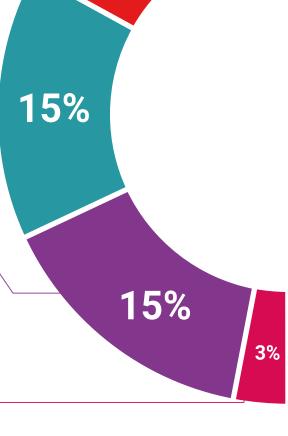
TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current nutritional counselling techniques and procedures. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, 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.



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



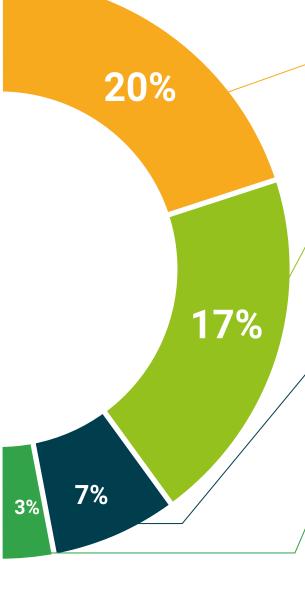
There is scientific evidence suggesting that observing third-party experts can be useful.

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.







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This program will allow you to obtain your **Postgraduate Diploma in Quality Control in Food Industries** 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 Diploma in Quality Control in Food Industries

Modality: online

Duration: 6 months

Accreditation: 18 ECTS



has successfully passed and obtained the title of: Postgraduate Diploma in Quality Control in Food Industries

This is a program of 450 hours of duration equivalent to 18 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





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