Postgraduate Certificate
Industry 4.0 Digitalization in Quality Management

tech technological university

Postgraduate Certificate
Industry 4.0 Digitalization in Quality Management for Nutritionists

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

Exams: **online** Website: **www.techtitute.com/us/nutrition/postgraduate-certificate/industry-digitalization-quality-management-nutritionists**

Index

01
Introduction

Almost every sector has been invaded by technology, and the food industry is no different, so it is crucial nutritionists are trained to successfully take on the new challenges in the profession. In this sense, digitization can lead to an improvement in food safety and quality management systems, making it imperative to increase knowledge in the field. Take advantage of the opportunity and acquire solid knowledge in this field that will allow you to become a successful professional.

" This program is the best option you can find to specialize in Food Safety in the area of nutrition and update your knowledge of the field"

On the food crises that have occurred in recent decades at European and world level have demonstrated the need for systems to identify, locate and withdraw those products that could represent a food safety risk and a danger to the health of the population. The obligation of all companies in the food sector to have a food safety plan incorporating all the HACCP principles of the Codex Alimentarius makes it essential for the members of the quality department team to be familiar with each of the phases of the HACCP system, including batch traceability.

For this reason, the Postgraduate Certificate in Industry 4.0 Digitalization in Quality Management offers professionals a solid foundation of skills and abilities that will allow them to develop and implement traceability plans in various food sectors in the industry.

In addition, this program also describes the importance of the application of digital media and platforms in the Quality Management systems of the Food Industry, with special emphasis on the migration strategies from the traditional to the digital system.

For a proper understanding of these issues, the current definitions of food quality and safety standards are discussed. In addition, it describes the impact of digital platforms on the performance of the main international regulatory bodies. Another of the strengths of this program is the presentation of concrete case studies in which digitization leads to an improvement in the quality management systems of the food industry.

The teachers on this Postgraduate Certificate 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 contamination, intentional contamination and fraud, regulatory schemes for food safety certification (Food Safety/Food Integrity) and traceability (Food Defence and Food Fraud/Food Authenticity), and in the digitization of quality management.

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

This **Postgraduate Certificate in Industry 4.0 Digitalization in Quality Management** 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 development
- The latest developments in industry 4.0 digitization in quality management
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies in industry 4.0 digitalization
- 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

The best knowledge on the market in the area of food industry digitization, condensed in a comprehensive academic program"

"

You are just one step away from increasing your knowledge and elevating your competencies as a nutritionist to the next level"

Its teaching staff includes professionals who belong to the field of food safety in the area of nutrition, and who bring to this training 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 a novel interactive video system made by recognized and extensively experienced experts in Industry 4.0 Digitalization in Quality Management.

This program comes with the best educational material, providing you with a contextual approach that will facilitate your learning.

This 100% online Postgraduate Certificate will allow you to combine your studies with your professional work while increasing your knowledge in this field.

02
Objectives

The Postgraduate Certificate in Industry 4.0 Digitalization in Quality Management is aimed at facilitating professional performance based on the latest and most innovative advances in the sector. All this, in an exclusively practical way, by means of the most complete theoretical and practical contents in the sector. Likewise, during the course of this Postgraduate Certificate, professionals will address the main interventions specialists conduct in food safety. This will allow students to improve and enhance their skills in this regard, with the certainty of performing the protocols as effectively and safely as possible.

This is the best option to learn about the main developments in food safety in the field of nutrition"

General objectives

- 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
- Analyze the advantages of digitalization in the currently established food safety and quality management processes
- Develop specialized knowledge of the different commercial platforms and internal IT tools for process management
- Define the importance of a migration process from a traditional to a digital system in food quality and safety management
- Establish strategies for the digitalization of protocols and documents related to the management of different food quality and safety processes

Specific objectives

- 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

- Examine the quality standards and food norms in force for the digitization of the different international reference bodies

- Identify the main commercial software and internal IT strategies that enable the management of specific food safety and quality processes

- Establish appropriate strategies for the transfer of traditional quality management processes to digital platforms

- Define the key points of the digitization process of a Hazard Analysis and Critical Control Point (HACCP) program

- Analyze alternatives for the implementation of prerequisite programs (PPR), HACCP plans and monitoring of standardized operating programs (SOP)

- Analyze the most appropriate protocols and strategies for digitization in risk communication

- Develop mechanisms for digitalizing the management of internal audits, recording corrective actions and monitoring continuous improvement programs

Highly specialized objectives in a program created to train the best professionals in Nutrition"

Course Management

The program includes in its teaching staff leading experts in food safety in the area of nutrition, who pour into this training 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 specializes the nutritionist and providing him/her with the necessary academic tools to practice in this area with greater guarantees of success.

" *Leading professionals in the field have come together to teach you the latest advances in food safety in the area of nutrition"*

Management

Dr. Limón Garduza, Rocío Ivonne

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

Professors

Dr. Colina Coca, Clara
- Collaborating Professor at the UOC. 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, Erica
- 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. Velderrain Rodríguez, Gustavo Rubén
- D. in Science. Center for Research in Food and Development, A.C. (CIAD)
- Member of the National System of Researchers of CONACyT (Mexico)

Structure and Content

The content structure has been designed by the best professionals in the sector, 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 area, has designed the most complete and up-to-date compendium of contents and practical activities in the sector with the aim of providing nutritionists with the tools they need to carry out their daily practice successfully.

" This Postgraduate Certificate in Industry 4.0 Digitalization in Quality Management contains the most complete and up-to-date academic program on the market"

Module 1. Logistics and Batch Traceability

1.1. Introduction to Traceability
 1.1.1. Background to the Traceability System
 1.1.2. Traceability Concept
 1.1.3. Types of Traceability
 1.1.4. Information Systems
 1.1.5. Advantages of Traceability
1.2. Legal Framework for Traceability. Part I
 1.2.1. Introduction
 1.2.2. Horizontal Legislation Related to Traceability
 1.2.3. Vertical Legislation Related to Traceability
1.3. Legal Framework for Traceability. Part II
 1.3.1. Mandatory Application of the Traceability System
 1.3.2. Objectives of the Traceability System
 1.3.3. Legal Responsibilities
 1.3.4. Penalty Regime
1.4. Implementation of the Traceability Plan
 1.4.1. Introduction
 1.4.2. Previous Stages
 1.4.3. Traceability Plan
 1.4.4. Product Identification System
 1.4.5. System Test Methods

1.5. Product Identification Tools
 1.5.1. Hand Tools
 1.5.2. Automated Tools
  1.5.1.1. EAN Bar Code
  1.5.1.2. RFID// EPC
 1.5.3. Records
  1.5.3.1. Registration Identification of Raw Materials and other Materials
  1.5.3.2. Registration of Food Processing
  1.5.1.3. Final Product Identification Record
  1.5.1.4. Recording of the Results of Checks Performed
  1.5.1.5. Record Keeping Period
1.6. Incident Management, Product Recall and Reclamation and Customer Complaints
 1.6.1. Incident Management Plan
 1.6.2. Manage Customer Complaints
1.7. Supply Chain
 1.7.1. Definition
 1.7.2. Supply Chain Steps
 1.7.3. Supply Chain Trends
1.8. Logistics
 1.8.1. The Logistical Process
 1.8.2. Supply Chain vs. Logistics
 1.8.3. Containers
 1.8.4. Packaging
1.9. Modes and means of Transportation
 1.9.1. Transportation Concept
 1.9.2. Modes of Transport, Advantages and Disadvantages
1.10. Food Product Logistics
 1.10.1. Cold Chain
 1.10.2. Perishable Products
 1.10.3. Non-Perishable Products

## Module 2. Digitization of the Quality Management System

2.1.   Quality Standards and Risk Analysis in the Food Industry
    2.1.1.   Current Food Safety and Quality Standards
    2.1.2.   Main Risk Factors in Food Products

2.2.   The "Age of digitization" and Its Influence on Global Food Safety Systems
    2.2.1.   Codex Alimentarius Global Food Safety Initiative
    2.2.2.   Hazard Analysis and Critical Control Point (HACCP)
    2.2.3.   ISO 22000

2.3.   Commercial Software for Food Safety Management
    2.3.1.   Use of Smart Devices
    2.3.2.   Business Software for Specific Management Processes

2.4.   Establishment of Digital Platforms for the Integration of a Team Responsible for the Development of the HACCP Program
    2.4.1.   Stage 1. Preparation and Planning
    2.4.2.   Stage 2. Implementation of Prerequisite Programs for Hazards and Critical Control Points of the HACCP program
    2.4.3.   Stage 3. Execution of the Plan
    2.4.4.   Stage 4. HACCP Verification and Maintenance

2.5.   Digitization of Pre-requisite Programs (PPR) in the Food Industry – Migration from Traditional to Digital Systems
    2.5.1.   Primary Production Processes
        2.5.1.1. Good Hygiene Practices (GHP)
        2.5.1.2 Good Manufacturing Practices (GMP)
    2.5.2.   Strategic Processes
    2.5.3.   Operational Processes
    2.5.4.   Support Processes

2.6.   Platforms for Monitoring "Standard Operating Procedures (SOPs)"
    2.6.1.   Training of Personnel in the Documentation of Specific SOPs
    2.6.2.   Channels of Communication and Monitoring of SOP Documentation

2.7.   Protocols for Document Management and Communication Between Departments
    2.7.1.   Traceability Document Management
        2.7.1.1. Procurement Protocols
        2.7.1.2. Traceability of Raw Material Receipt Protocols
        2.7.1.3. Traceability of Warehouse Protocols
        2.7.1.4. Process Area Protocols
        2.7.1.5. Traceability of Hygiene Protocols
        2.7.1.6. Product Quality Protocols
    2.7.2.   Implementation of Alternative Communication Channels
        2.7.2.1. Use of Storage Clouds and Restricted Access Folders
        2.7.2.2. Coding of Documents for Data Protection

2.8.   Digital Documentation and Protocols for Audits and Inspections
    2.8.1.   Management of Internal Audits
    2.8.2.   Record of Corrective Actions
    2.8.3.   Application of the "Deming cycle"
    2.8.4.   Management of Continuous Improvement Programs

2.9.   Strategies for Proper Risk Communication
    2.9.1.   Risk Management and Communication Protocols
    2.9.2.   Effective Communication Strategies
    2.9.3.   Public Information and Use of Social Networks

2.10.   Case Studies of Digitization and Its Advantages in Reducing Risks in the Food Industry
    2.10.1.   Food Safety Risks
    2.10.2.   Food Fraud Risks
    2.10.3.   Food Defence Risks

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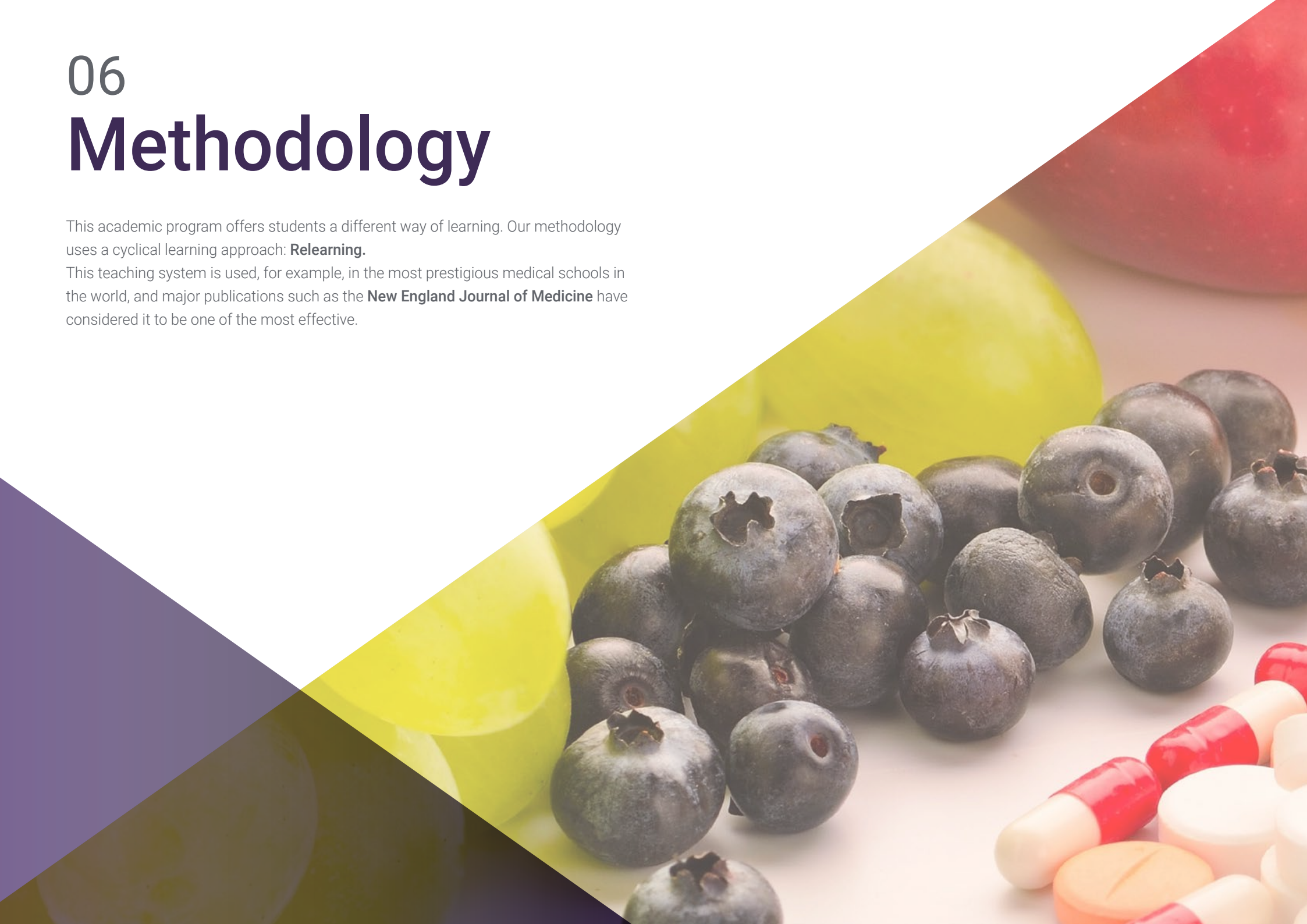
Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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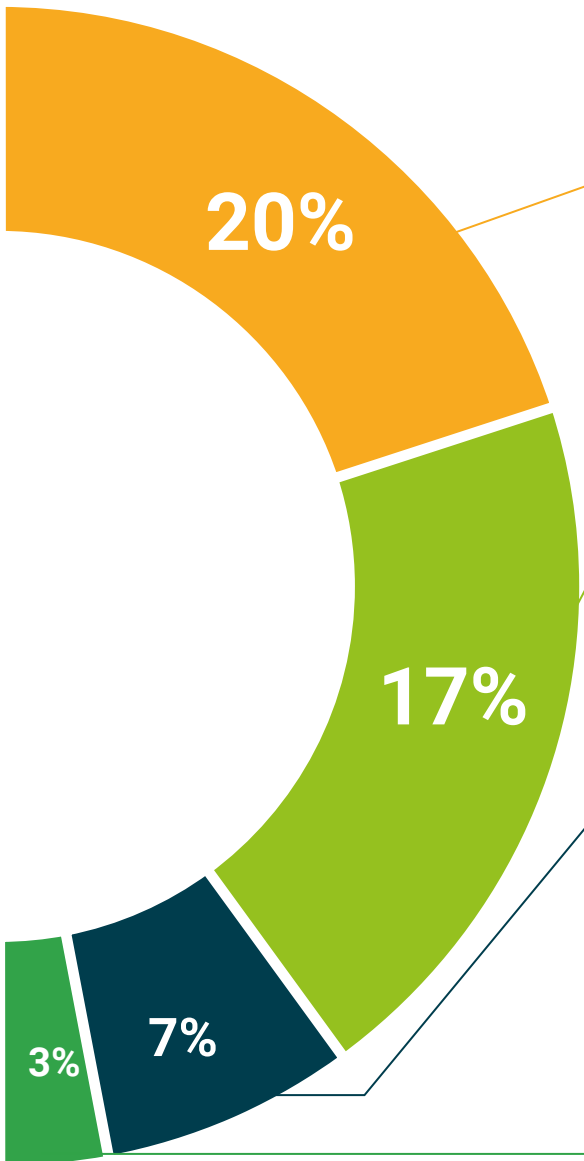
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

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%
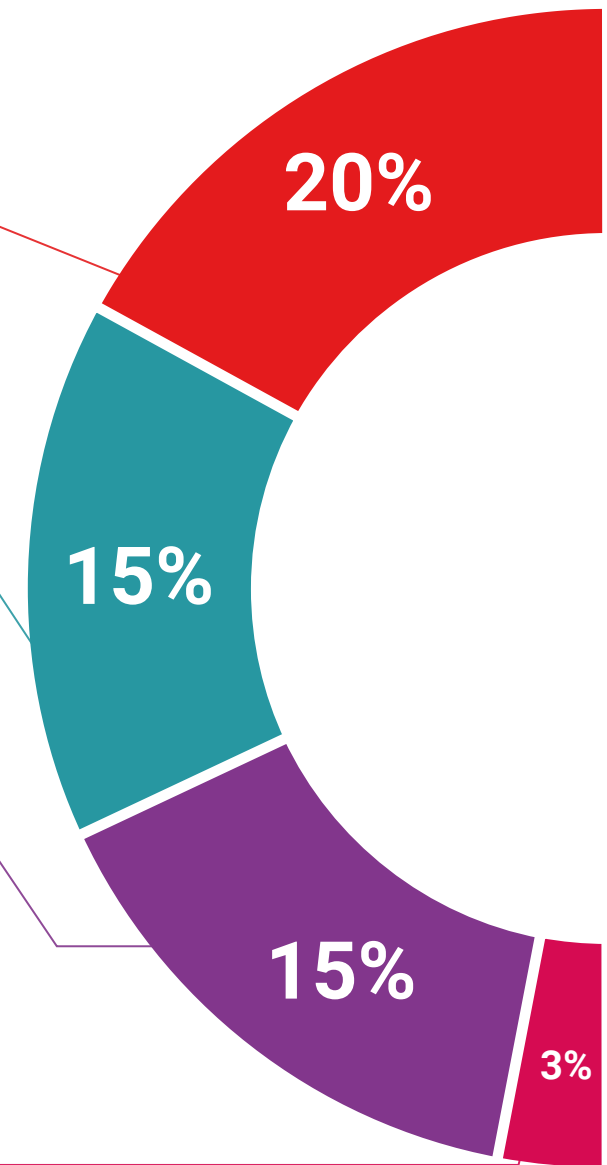
Expert-Led Case Studies and Case Analysis

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 Industry 4.0 Digitalization in Quality Management guarantees you, in addition to the most rigorous and updated training, access to a Postgraduate Certificate issued by TECH Technological University.

Successfully complete this program and receive your university degree without travel or laborious paperwork"

This **Postgraduate Certificate in Industry 4.0 Digitalization in Quality Management** 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 diploma 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 Industry 4.0 Digitalization in Quality Management**

Official Nº of hours: **300 h.**

tech technological university

Awards the following

DIPLOMA
to

Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Industry 4.0 Digitalization in Quality Management

This is a qualification awarded by this University, equivalent to 300 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

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 EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

tech *technological university*

Postgraduate Certificate

Industry 4.0 Digitalization
in Quality Management
for Nutritionists

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

Postgraduate Certificate
Industry 4.0 Digitalization in Quality Management

tech technological university