

Postgraduate Diploma Digitization of Industry 4.0 in Quality and Safety Management





Postgraduate Diploma Digitizing Industry 4.0 in Quality and Safety Management

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-digitizing-industry-quality-safety-management

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01

Introduction

Digitization can lead to improvements in food safety and quality management systems, so it is necessary to increase knowledge in this field. The student can take advantage of the opportunity and acquire a solid knowledge in this field that will allow them to become a successful professional.



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*Join our team of students and become
the best in your profession to ensure
food safety we consume"*

The Industry 4.0 Digitalization Postgraduate Diploma university in Quality and Safety Management from TECH Technological University is the most complete among those offered in universities at this time because it is aimed at the comprehensive management of food safety. Thus, relevant concepts in food safety are developed, focusing on the production of raw materials of animal origin, and the differentiated quality seals are studied, as well as the audit and certification processes of food industries.

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. Therefore, this training provides a solid foundation, skills and abilities that will allow you to develop and implement a traceability plan in the different food industries of the sector.

In addition, the importance of the application of digital media and platforms in quality management systems in the food industry is described, with special emphasis on migration strategies from the traditional to the digital system.

The teachers of this Postgraduate Diploma university 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 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, research and development of new foods and finally, the coordination and execution of R&D&I projects. All this is necessary to achieve a complete and specialized training, highly demanded by professionals in the food sector.

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

This **Postgraduate Diploma in Digitization of Industry 4.0 in Quality and Safety Management** contains the most complete and up-to-date Educational program on the market. The most important features of the program include:

- ♦ The development of case studies presented by experts in veterinary food safety
- ♦ The graphic, schematic, and eminently practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ News on Industry 4.0 Digitization in Quality and Safety Management for Nutritionists Safety
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Special emphasis on innovative methodologies in Industry 4.0 Digitalization
- ♦ 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



Don't miss the opportunity to study this Postgraduate Postgraduate Diploma with us. It's the perfect opportunity to advance your career".

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This University Expert is the best investment you can make in selecting a refresher program to update your knowledge in Industry 4.0 Digitalization in Quality and Safety Management"

It includes, in its teaching staff, professionals belonging to the field of veterinary food safety, who pour into this training the experience of their work, in addition to recognized specialists from reference 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 training programmed to train in real situations.

This program is designed around Problem Based Learning, where the specialist must try to solve the different professional practice situations that arise during the course. For this purpose, the professional will be assisted by an innovative interactive video system developed by recognized and experienced experts in Integrated Food and Beverage Industry Safety Management.

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

Do you want to choose when and where to study? Do you need training that you can combine with your job? This 100% online Expert offers you everything you are looking for in a training program.



02 Objectives

The Postgraduate Diploma university in Digitization of Industry 4.0 in Quality and Safety Management is aimed at facilitating the professional's performance with the latest and most innovative advances in the sector.





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This training will allow you to be updated and learn about the main advances in the sector”



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
- ◆ 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 Safety and Quality Management
- ◆ Establish strategies for the digitalization of protocols and documents related to the management of different Food Quality and Safety processes





Specific Objectives

- ◆ 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
- ◆ 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



A unique, key, and decisive training experience to boost your professional development"

03

Course Management

The program includes in its teaching staff leading experts in Veterinary Food Safety who bring to this training the experience of their work. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.





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Leading professionals in the field have come together to show you what's new in food safety"

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 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

- ♦ D. in Nutrition, Food Science and Technology
- ♦ Master in Food Quality and Safety: APPCC Systems
- ♦ Postgraduate in Sports Nutrition
- ♦ Collaborating professor at the UOC. Since 2018

Ms. Escandell Clapés, Erica

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

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)



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. Moreno Fernández, Silvia

- ◆ PhD in Food Science (Universidad Autónoma de 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
- ◆ Postdoctoral Researcher. Autonomous University of Madrid. Since 2019

04

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.





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This Postgraduate Diploma in Digitization of Industry 4.0 in Quality and Safety Management contains the most complete and up-to-date Scientist program on the market”

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
- 1.8. 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. Logistics and Batch Traceability

- 2.1. Introduction to Traceability
 - 2.1.1. Background to the Traceability System
 - 2.1.2. Traceability Concept
 - 2.1.3. Types of Traceability
 - 2.1.4. Information Systems
 - 2.1.5. Advantages of Traceability
- 2.2. Legal Framework for Traceability. Part I
 - 2.2.1. Introduction
 - 2.2.2. Horizontal Legislation Related to Traceability
 - 2.2.3. Vertical Legislation Related to Traceability



- 2.3. Legal Framework for Traceability. Part II
 - 2.3.1. Mandatory Application of the Traceability System
 - 2.3.2. Objectives of the Traceability System
 - 2.3.3. Legal Responsibilities
 - 2.3.4. Penalty Regime
- 2.4. Implementation of the Traceability Plan
 - 2.4.1. Introduction
 - 2.4.2. Previous Stages
 - 2.4.3. Traceability Plan
 - 2.4.4. Product Identification System
 - 2.4.5. System Test Methods
- 2.5. Product Identification Tools
 - 2.5.1. Hand Tools
 - 2.5.2. Automated Tools
 - 2.5.1.1 EAN Bar Code
 - 2.5.1.2 RFID/// EPC
 - 2.5.3 Records
 - 2.5.3.1 Registration Identification of Raw Materials and other Materials
 - 2.5.3.2 Registration of Food Processing
 - 2.5.3.3 Final Product Identification Record
 - 2.5.3.4 Recording of the Results of Checks Performed
 - 2.5.3.5 Record Keeping Period
- 2.6. Incident Management, Product Recall and Reclamation and Customer Complaints
 - 2.6.1. Incident Management Plan
 - 2.6.2. Manage Customer Complaints
- 2.7. Supply Chain
 - 2.7.1. Definition
 - 2.7.2. *Supply Chain* Steps
 - 2.7.3. Supply Chain Trends
- 2.8. Logistics
 - 2.8.1. The Logistical Process
 - 2.8.2. Supply Chain vs. Logistics
 - 2.8.3. Containers
 - 2.8.4. Packaging

- 2.9. Modes and means of Transportation
 - 2.9.1. Transportation Concept
 - 2.9.2. Modes of Transport, Advantages and Disadvantages
- 2.10. Food Product Logistics
 - 2.10.1. Cold Chain
 - 2.10.2. Perishable Products
 - 2.10.3 Non-Perishable Products

Module 3. Digitization of the Quality Management System

- 3.1. Quality Standards and Risk Analysis in the Food Industry
 - 3.1. 1 Current Food Safety and Quality Standards
 - 3.1. 2 Main Risk Factors in Food Products
- 3.2. The "Age of digitization" and Its Influence on Global Food Safety Systems
 - 3.2. 1 Codex Alimentarius Global Food Safety Initiative
 - 3.2. 2 Hazard Analysis and Critical Control Point (HACCP)
 - 3.2.3 ISO 22000 Standard
- 3.3. Commercial Software for Food Safety Management
 - 3.3. 1 Use of Smart Devices
 - 3.3. 2 Business Software for Specific Management Processes
- 3.4. Establishment of Digital Platforms for the Integration of a Team Responsible for the Development of the HACCP Program
 - 3.4.1 Stage 1. Preparation and Planning
 - 3.4.2 Stage 2. Implementation of Prerequisite Programs for Hazards and Critical Control Points of the HACCP program
 - 3.4.3 Stage 3. Execution of the Plan
 - 3.4.4 Stage 4. HACCP Verification and Maintenance
- 3.5. Digitization of Pre-requisite Programs (PPR) in the Food Industry - Migration from Traditional to Digital Systems
 - 3.5. 1 Primary Production Processes
 - 3.5.1.1 Good Hygiene Practices (GHP)
 - 3.5.1.2 Good Manufacturing Practices (GMP)
- 3.5.2 Strategic Processes
- 3.5.3 Operations Processes
- 3.5.4 Supportive care Processes
- 3.6. Platforms for Monitoring "Standard Operating Procedures (SOPs)"
 - 3.6. 1 Training of Personnel in the Documentation of Specific SOPs
 - 3.6. 2 Channels of Communication and Monitoring of SOP Documentation
- 3.7. Protocols for Document Management and Communication Between Departments
 - 3.7. 1 Traceability Document Management
 - Procurement Protocols
 - 3.7.1.2 Traceability of Raw Material Receipt Protocols
 - 3.7.1.3 Traceability of Warehouse Protocols
 - 3.7.1.4 Process Area Protocols
 - 3.7.1.5 Traceability of Hygiene Protocols
 - 3.7.1.6 Product Quality Protocols
 - 3.7. 2 Implementation of Alternative Communication Channels
 - 3.7.2.1 Use of Storage Clouds and Restricted Access Folders
 - 3.7.2.2 Coding of Documents for Data Protection
- 3.8. Digital Documentation and Protocols for Audits and Onspections
 - 3.8. 1 Management of Internal Audits
 - 3.8. 2 Record of Corrective Actions
 - Application of the "Deming cycle"
 - 3.8. 4 Management of Continuous Improvement Programs
- 3.9. Strategies for Proper Risk Communication
 - 3.9. 1 Risk Management and Communication Protocols

- 3.9. 2 Effective Communication Strategies
- 3.9. 3 Public Information and Use of Social Networks
- 3.10. Case Studies of Digitization and Its Advantages in Reducing Risks in the Food Industry
 - 3.10. 1 Food Safety Risks
 - 3.10. 2 Food Fraud Risks
 - 3.10. 3 Food Defense Risks

“ *This training will allow you to advance in your career comfortably*”



05 Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





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

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, 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 you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gervas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the actual conditions in a veterinarian's professional 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. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to evaluate real situations and knowledge application
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. The feeling that the effort invested is effective becomes a very important motivation for veterinarians, which translates into a greater interest in learning and an increase in the time dedicated to working on the course.



Relearning Methodology

At TECH we enhance the Harvard 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.



Veterinarians will learn through real cases and by resolving 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 65,000 veterinarians have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. Our teaching method is developed in a highly demanding environment, where the students have a high 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.



Latest Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current and procedures of veterinary techniques. 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.

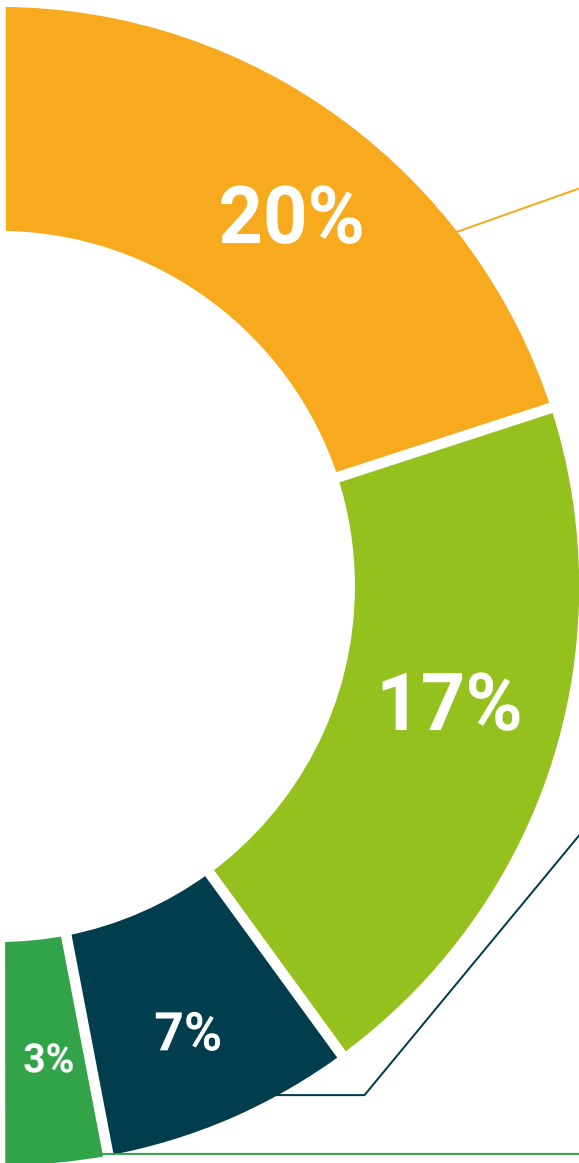
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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

Postgraduate Diploma in Digitizing Industry 4.0 in Quality and Safety Safety Management guarantees, in addition to the most rigorous and up-to-date training, access to a Postgraduate Diploma issued by TECH Technological University.



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Successfully complete this training and receive your university degree without travel or laborious paperwork”

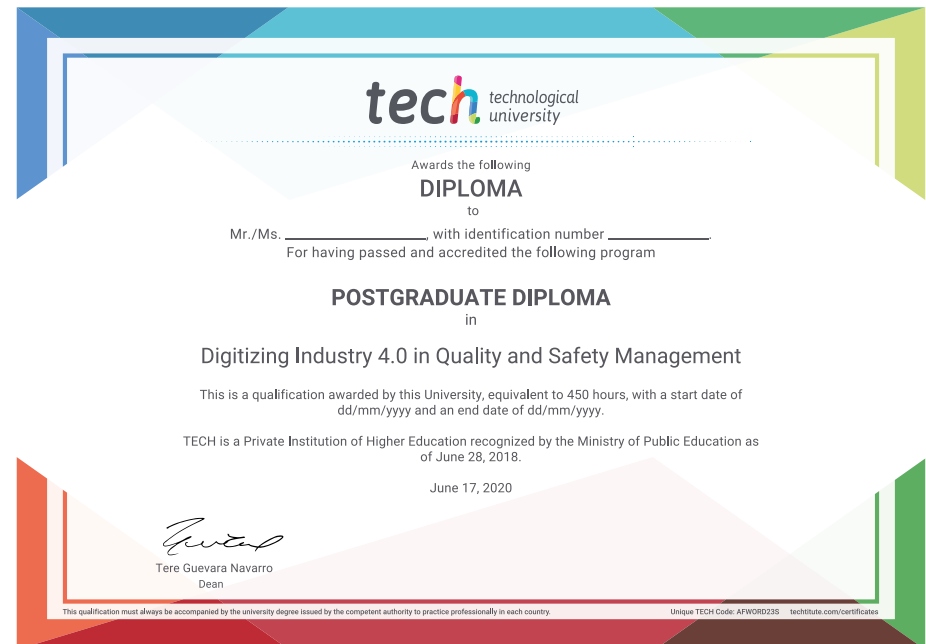
This **Postgraduate Diploma in Digitization of Industry 4.0 in Quality and Safety Management** contains the most complete and up-to-date Scientist program on the market.

After passing the assessments, the student will receive their corresponding **Postgraduate Diploma**, issued by **TECH Technological University** via tracked delivery*.

The diploma issued by **TECH Technological University** will express the qualification obtained in the Postgraduate Diploma, and will meet the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Diploma in Digitizing Industry 4.0 in Quality and Safety Management**

Official Number of Hours: **450 h.**



*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..



Postgraduate Diploma
Digitizing Industry
4.0 in Quality and Safety
Management

- » Modality: **online**
- » Duration: **6 months**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Postgraduate Diploma Digitizing Industry 4.0 in Quality and Safety Management

