Postgraduate Diploma
Industrial Manufacturing

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Postgraduate Diploma
Industrial Manufacturing

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

Website: **www.techtitute.com/us/engineering/postgraduate-diploma/postgraduate-diploma-industrial-manufacturing**

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01

Introduction

Thanks to a correct implementation of Industrial Manufacturing processes, the company becomes more profitable economically speaking. The wealth of a society is boosted through the strengthening and growth of production and manufacturing companies, which are able to produce and export competitive products, reinvest and in turn generate more jobs. Maintaining this optimal performance creates the need for expert professionals who know each phase of work, as well as the need for new technologies and methodologies; that is why this exclusive program in Industrial Manufacturing has been created, to provide specific knowledge to work in this area. A 100% online program, achievable within 6 months, based on relearning, an effective methodology for learning today.

Get trained in areas of importance for the productive apparatus of society and become a professional with multiple opportunities"

In the digital era and with the implementation of new technologies in Industrial Manufacturing, many processes that previously could not be programmed have been automated. This generates advantages in volume production and work effectiveness, so professionals need to know it very well to be able to take advantage of it. For example, with production systematization, procurement and warehouse control, it is possible to monitor available *stocks*, as well as customer requirements in real time.

The quality of products and services is another fundamental aspect in Industrial Manufacturing today, since customers demand higher final product effectiveness, which is why the focus is on implementing greater awareness of continuous improvement for the purpose of obtaining good economic results and promote the best organizational performance.

The Postgraduate Diploma in Industrial Manufacturing aims to help students develop an integral and autonomous profile with teamwork skills, avant-garde and knowledgeable of new trends and efficient working methods in production companies. To this end, the program has been divided into three specific modules that cover product design and innovation management; production systems, supply and warehousing; and production planning and control.

Students will generate a spirit of entrepreneurship for the company's production process, taking into consideration the need for a new vision towards sustainability in production designs, as well as identifying the phases and operations of manufacturing processes, making calculations and measurements for the implementation of products and facilities, applying continuous improvement methodologies in the development of quality management, among other skills that will be added to their profile in the course of the program.

All this is possible through the most cutting-edge 100% online study methodology powered by TECH, which provides the flexibility and quality that today's professionals need to balance their daily schedule with a new purpose of intellectual improvement. Accompanied by a high-level teaching staff that will use numerous multimedia teaching resources such as practical exercises, video techniques, interactive summaries or lectures to facilitate the process.

This **Postgraduate Diploma in Industrial Manufacturing** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Case studies presented by experts in Industrial Engineering
- 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
- Practical exercises where the self-assessment process can be carried out to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Access to content from any fixed or portable device with an Internet connection

The TECH study methodology will allow you to acquire skills and knowledge with better results than any other current methodology"

After this Postgraduate Diploma, you will generate new models in product design, adequately managing innovation, sustainability and advanced technological processes"

Master the phases of production planning and learn how to apply continuous improvement methodologies in quality management.

Learn how to design product and facility implementation projects.

The program's teaching staff includes professionals in the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and a 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, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

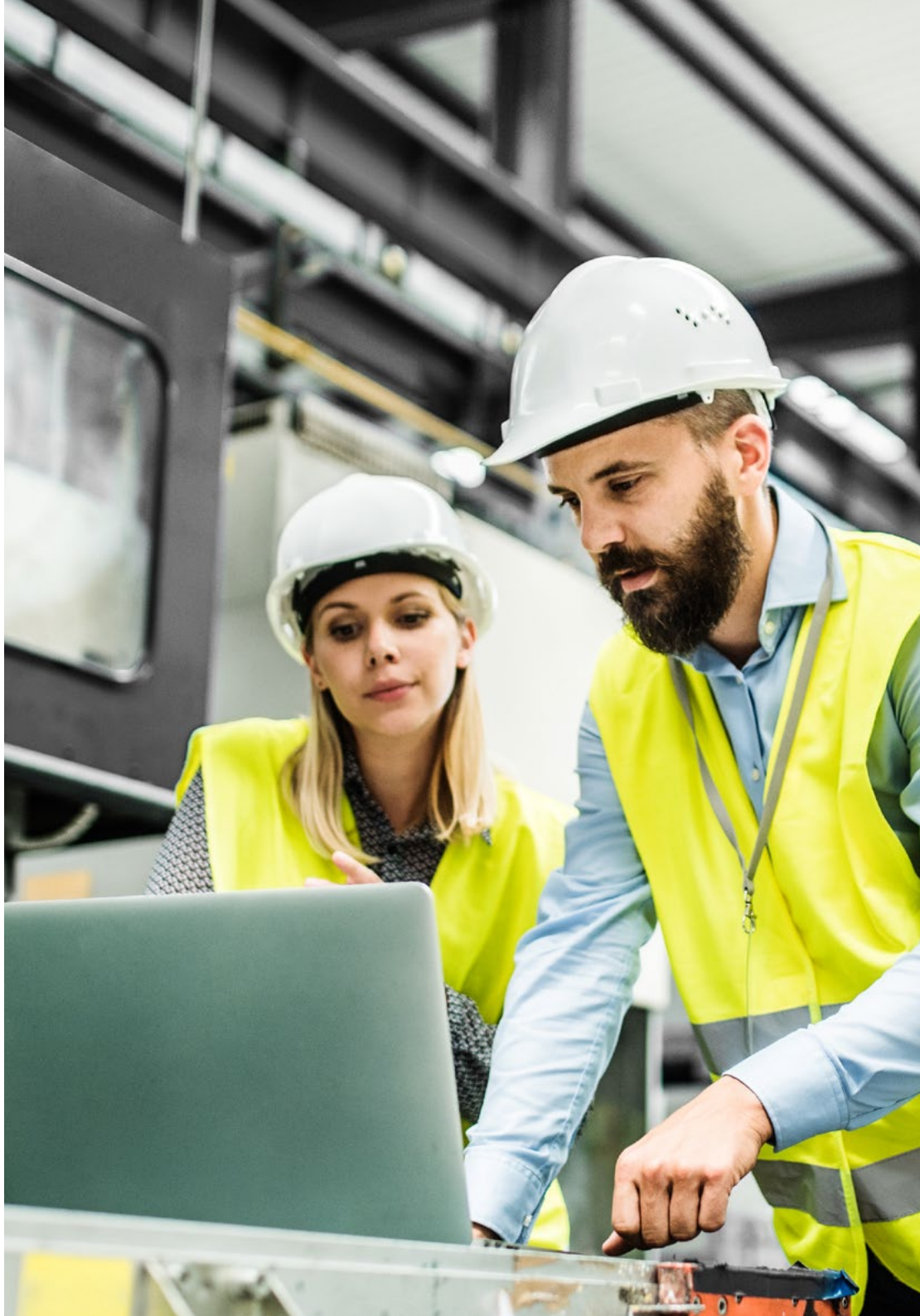
Objectives

As part of the objectives set out in this Postgraduate Diploma in Industrial Manufacturing, the program will cover in detail the work dynamics in production units and their functional interaction, both in terms of operations and in terms of fundamental aspects in the design of production systems, models and strategies. The sole purpose is that the graduate is able to perform efficiently in any organization of a productive nature or development of projects that demand manufacturing processes, more responsible with the environment and adapted to new technologies.

The new processes demand trained professionals who are aware of the product quality customers demand as well as of environmental responsibility"

General objectives

- Understand company functions and the elements involved
- Develop new production models and strategies within the company
- Understand new in company production designs, considering sustainability and product life cycle
- Comply with regulatory policies in terms of quality and industrial safety
- Undertake production processes based on quality and problem solving
- Understand the importance of planning within production processes, production units work dynamics and function interactions
- Analyze industrial organization needs to design maintenance plans adjusted to current and future contexts
- Know new business models in entrepreneurship, its components and different value propositions
- Understand the importance of creativity and innovation in business approaches
- Understand the methodologies in business project management processes



Specific objectives

Module 1. Product Design and Innovation Management

- Identify the fundamental aspects of production systems design
- Apply sustainable innovation criteria in product design
- Analyze product design life cycles and the phases
- Design management processes for industrial organizations that take innovation and sustainability into account
- Apply product life cycle criteria in the search for sustainable products
- Identify the main characteristics of innovation as a business strategy from a sustainable perspective

Module 2. Systems of Production, Procurement and Warehouses

- Identify the fundamental aspects of production system models and strategies
- Apply the acquired knowledge of mechanics, materials and manufacturing in an innovative and creative way
- Identify the phases and operations of manufacturing processes
- Perform calculations and measurements for the implementation of products and facilities
- Evaluate industrial infrastructure (facilities and equipment) to ensure optimal conditions of use
- Design product and facility implementation projects
- Use multidisciplinary and international teams
- Identify and design maintenance types and plans

Module 3. Production Planning and Control

- Achieve detailed knowledge production units work dynamics and functionality interaction
- Address the importance of production planning as a key profitability tool
- Delve deeper into the fundamentals of Lean thinking and the main differences compared to traditional manufacturing processes
- Analyze and implement the different production planning systems
- Establish maintenance plans suitable for each industrial organization

Delve deeper into the fundamentals of Lean thinking and the main differences compared to traditional manufacturing processes in this Postgraduate Diploma”

03

Structure and Content

This Postgraduate Diploma in Industrial Manufacturing consists of three modules, with exclusive content selected by TECH, which has been distributed in a variety of written and audiovisual formats, so professionals acquire in a dynamic and comfortable way the tools and specialized knowledge of new production trends in organizational environments. Taught in a methodology based on relearning and 100% online that will allow professionals to advance in their training at their own pace.

You will have a personalized and exclusive professionalization itinerary developed by TECH, with the most avant-garde methodology"

Module 1. Product Design and Innovation Management

1.1. QFD Product Design and Development (Quality Function Deployment)
- 1.1.1. From Customers to Technical Requirements
- 1.1.2. The House of Quality: Implementation Phases
- 1.1.3. Advantages and Limitations

1.2. Design Thinking
- 1.2.1. Design, Need, Technology and Strategy
- 1.2.2. Stages of the Process
- 1.2.3. Tools and Techniques Used

1.3. Concurrent Engineering
- 1.3.1. Concurrent Engineering Fundamentals
- 1.3.2. Concurrent Engineering Methodologies
- 1.3.3. Tools Used

1.4. Program: Planning and Definition
- 1.4.1. Requirements: Quality Management
- 1.4.2. Developmental Phases: Time Management
- 1.4.3. Materials, Feasibility, Processes: Cost Management
- 1.4.4. Project Team: Human Resource Management
- 1.4.5. Information: Managing Complaints
- 1.4.6. Risk Analysis: Risk Management

1.5. Products: Design (CAD) and Development
- 1.5.1. Information Management: PLM: Product Life Cycle
- 1.5.2. Product Failure Modes and Effects
- 1.5.3. CAD Construction: Review
- 1.5.4. Product and Manufacturing Plans
- 1.5.5. Design Verification

1.6. Prototypes: Development
- 1.6.1. Rapid Prototyping
- 1.6.2. Control Plan
- 1.6.3. Experiment Design
- 1.6.4. Types of Measurement Systems

1.7. Productive Process: Design and Development
- 1.7.1. Process Failure Modes and Effects
- 1.7.2. Design and Construction of Manufacturing Tooling
- 1.7.3. Design and Construction of Control Tooling (Gauges)
- 1.7.4. Adjustment Phase
- 1.7.5. Production Start-up
- 1.7.6. Initial Process Assessment

1.8. Product and Process: Validation
- 1.8.1. Measuring Systems Assessment
- 1.8.2. Validation Trials
- 1.8.3. Statistical Process Control (SPC)
- 1.8.4. Product Certification

1.9. Change Management: Improvement and Corrective Measures
- 1.9.1. Type of Change
- 1.9.2. Variability Analysis, Improvement
- 1.9.3. Lessons Learned and Tested Practices
- 1.9.4. Process of Change

1.10. Innovation and Transfer Technologies
- 1.10.1. Intellectual Property
- 1.10.2. Innovation
- 1.10.3. Transfer Technologies

Module 2. Systems of Production, Procurement and Warehouses

2.1. Structure and Types of Production
- 2.1.1. Production Systems and Strategies
- 2.1.2. Inventory Management System
- 2.1.3. Production Indicators

2.2. Sales Structure, Types and Channels
- 2.2.1. Sales Structure: Organization, Channels and Sector
- 2.2.2. Sales Structure: Offices and Sales Groups
- 2.2.3. Determining a Sales Structure

2.3. Structure and Types of Procurement
- 2.3.1. Function of Procurement
- 2.3.2. Procurement Management
- 2.3.3. The Buying Decision Process

2.4. Design of Production Plants
- 2.4.1. Industrial Architecture and Plant Layout
- 2.4.2. Basic Types of Plant Layout
- 2.4.3. Characteristics for an Appropriate Plant Distribution

2.5. Warehouse Design
- 2.5.1. Advanced Warehouse Design
- 2.5.2. Collecting and Sorting
- 2.5.3. Material Flow Control

2.6. Process Design
- 2.6.1. Definition of Process Design
- 2.6.2. Principles of Process Design
- 2.6.3. Process Modeling

2.7. Resource Allocation
- 2.7.1. Introduction to Resource Allocation
- 2.7.2. Project Management
- 2.7.3. Resource Distribution

2.8. Industrial Operations Control
- 2.8.1. Process Control and its Characteristics
- 2.8.2. Examples of Industrial Processes
- 2.8.3. Industrial Controls

2.9. Warehouse Operations Control
- 2.9.1. Warehouse Operations
- 2.9.2. Inventory Control and Location Systems
- 2.9.3. Storage Management Techniques

2.10. Maintenance Operations
- 2.10.1. Industrial Maintenance and Typology
- 2.10.2. Maintenance Planning
- 2.10.3. Management of Computer-Assisted Maintenance

Module 3. Production Planning and Control

3.1. Manufacturing Planning Phases
- 3.1.1. Advanced Planning
- 3.1.2. Sales Projections and Methods
- 3.1.3. Definition of Takt Time
- 3.1.4. Materials Plan: MRP Minimum Stock
- 3.1.5. Staff Plan
- 3.1.6. Need for Equipment

3.2. Production Plan
- 3.2.1. Factors to Consider
- 3.2.2. Push Planning
- 3.2.3. Pull Planning
- 3.2.4. Mixed Systems

3.3. Kanban
- 3.3.1. Types of Kanban
- 3.3.2. Uses for Kanban
- 3.3.3. Autonomous Planning: 2-bin Kanban

3.4. Production Control
- 3.4.1. Production Planning Variances and Reporting
- 3.4.2. Production Performance Monitoring: Overall Equipment Effectiveness (OEE)
- 3.4.3. Total Capacity Monitoring: Total Effective Equipment Performance (TEEP)

3.5. Production Organization
- 3.5.1. Production Team
- 3.5.2. Process Engineering
- 3.5.3. Maintenance
- 3.5.4. Materials Control

3.6. Total Productive Maintenance (TPM)
- 3.6.1. Corrective Maintenance
- 3.6.2. Autonomous Maintenance
- 3.6.3. Preventative Maintenance
- 3.6.4. Predictive Maintenance
- 3.6.5. Maintenance Efficiency Indicators MTBF - MTTR

3.7. Plant Layout
- 3.7.1. Conditioning Factors
- 3.7.2. In-line Production
- 3.7.3. Work Cell Production
- 3.7.4. Applications
- 3.7.5. SLP Methodology

3.8. Just In Time (JIT)
- 3.8.1. JIT Description and Origin
- 3.8.2. Objectives
- 3.8.3. Applying JIT: Product Sequencing

3.9. Theory of Constraints (TOC)
- 3.9.1. Fundamental Principles
- 3.9.2. Five Steps in TOC and Implementation
- 3.9.3. Advantages and Disadvantages

3.10. Quick Response Manufacturing (QRM)
- 3.10.1. Description
- 3.10.2. Key Structuring Points
- 3.10.3. QRM Implementation

Enroll now and live the experience with other professionals and experts. The future is today”

04

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"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"

You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

> *Our program prepares you to face new challenges in uncertain environments and achieve success in your career"*

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

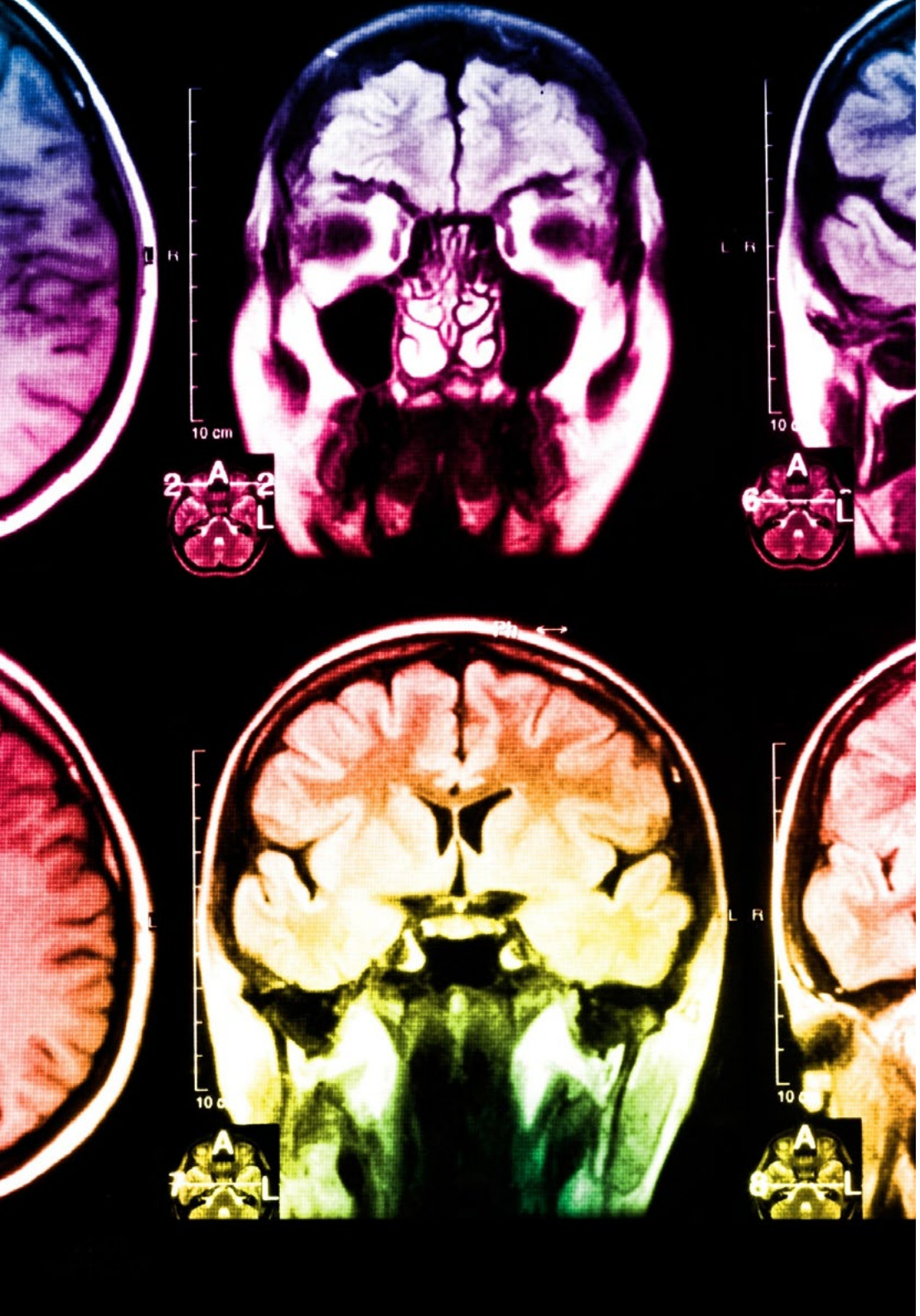
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



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. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. 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.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

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.

Classes

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

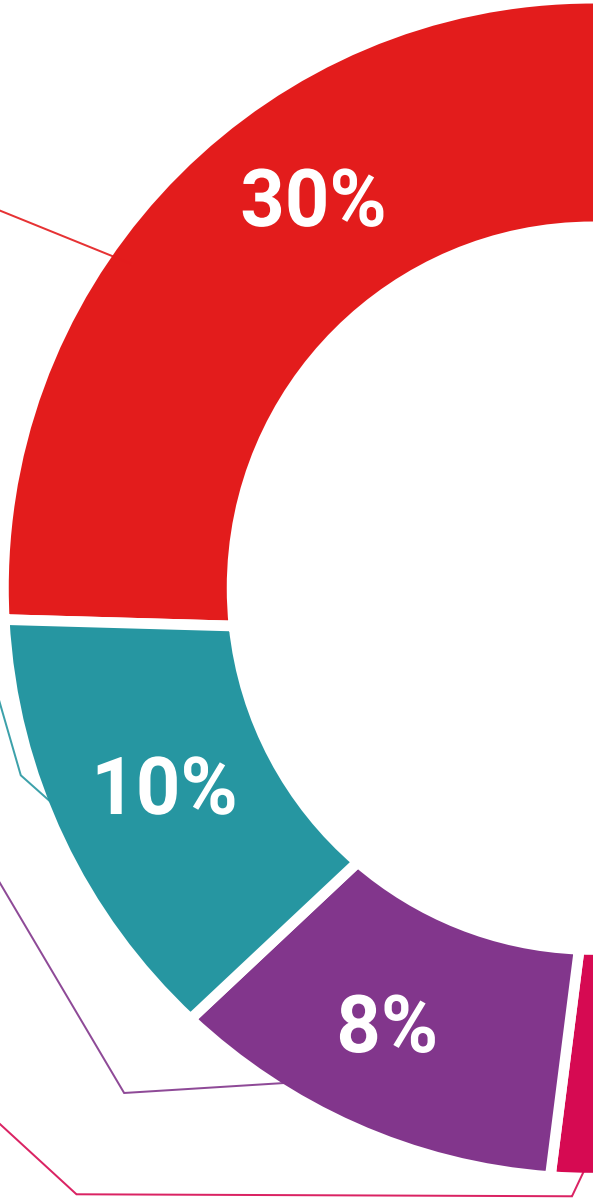
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

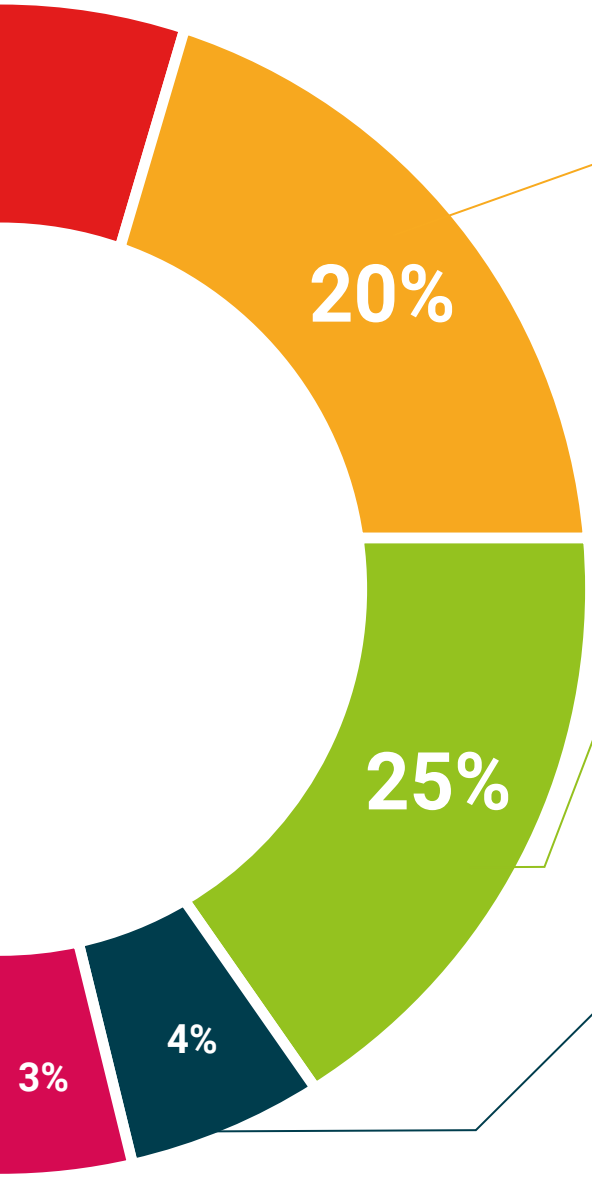
Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

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.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.

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".

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.

05

Certificate

The Postgraduate Diploma in Industrial Manufacturing guarantees you, in addition to the most rigorous and up-to-dated training, access to a Postgraduate Diploma issued by TECH Technological University.

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

This **Postgraduate Diploma in Industrial Manufacturing** contains the most complete and updated program on the market.

After the student has passed the evaluations, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** by tracked delivery*.

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

Title: **Postgraduate Diploma in Industrial Manufacturing**

Official Nº of hours: **450 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Industrial Manufacturing

This is a qualification awarded by this University, equivalent to 450 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

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

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