

# Postgraduate Diploma Industry 4.0 and Industry Solutions



## Postgraduate Diploma Industry 4.0 and Industry Solutions

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 24 ECTS
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/artificial-intelligence/postgraduate-diploma/postgraduate-diploma-industry-4-0-industry-solutions](http://www.techtute.com/us/artificial-intelligence/postgraduate-diploma/postgraduate-diploma-industry-4-0-industry-solutions)

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# 01

# Introduction

The United Nations recognized the growing importance of Digital Transformation at its last conference. Although Artificial Intelligence is increasingly being used by companies to increase both efficiency and productivity, it encompasses challenges that professionals must address to mitigate risks. These include barriers to the implementation of Industry 4.0, ranging from a shortage of digital skills or resistance to change to a lack of interoperable protocols. For this reason, TECH has developed a 100% online university program that will provide the most advanced strategies for business digitization.





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*You will achieve your professional goals thanks to the distinctive approach of this program, which will take you through all stages of of the smart factory development”*

The technological boom is completely revolutionizing all areas of society, thus improving the quality of life of its inhabitants. For example, Artificial Intelligence has transformed cities into Smart Cities.. Its tools are used to analyze real-time traffic data (such as images from surveillance cameras or traffic sensors) to better manage traffic flows. This includes optimizing traffic lights, identifying congestion and recommending alternative routes to minimize travel times. Given the benefits offered by these digital solutions, developers have a wide range of career prospects in different fields of work.

In this context, TECH implements a Postgraduate Diploma that will immerse students in Industry 4.0 and Sector Solutions. The program will provide the most innovative techniques to lead Digital Transformation projects in a variety of industries, based on disruptive technologies such as robotics. Students will acquire a solid understanding of the digital ecosystem, which will enable them to develop technological skills to revolutionize business. Likewise, students will have at their disposal advanced Smart Factory resources to better adapt to changing market demands and improve the competitiveness of institutions.

On the other hand, the university program is based on the Relearning, methodology, which will allow students to strengthen their practical skills as they learn in a dynamic way. To this end, they will have at their disposal a wide range of multimedia resources, including interactive summaries, explanatory videos, infographics, case studies and specialized readings. In this way, the only thing students will need to access the Virtual Campus will be an electronic device with Internet access (such as a computer, tablet or cell phone). In this way they will be able to enjoy an immersive learning experience that will take their professional horizons to a higher level.

This **Postgraduate Diploma in Industry 4.0 and Industry Solutions** contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by IoT experts and the provision of technological solutions
- The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- 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



*You will be able to use Artificial Intelligence tools to predict market behavior and make informed decisions"*

“

*You will have the most advanced data-driven tools to improve operational efficiency and product quality”*

*Looking to increase your leadership capabilities? Become a reference in Sector Solutions with this program in only 6 months.*

*The Relearning system used by TECH will adapt to your schedule and personal circumstances. Learn at your own pace.*

The program includes in its teaching staff, professionals from the sector who pour into this program the experience of their work, in addition to recognized specialists from prestigious reference societies and 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 education 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 during the academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.



# 02 Objectives

Upon completion of this program, graduates will have the most innovative tools to drive digital transformation projects in a variety of industries. Along the same lines, students will learn about business strategies pertaining to Industry 4.0, thus helping institutions to increase their efficiency thanks to the implementation of technologies such as robotics. On the other hand, they will have a broad knowledge regarding the technological trends of the future and will be specialized to develop innovative solutions to meet the needs of users.



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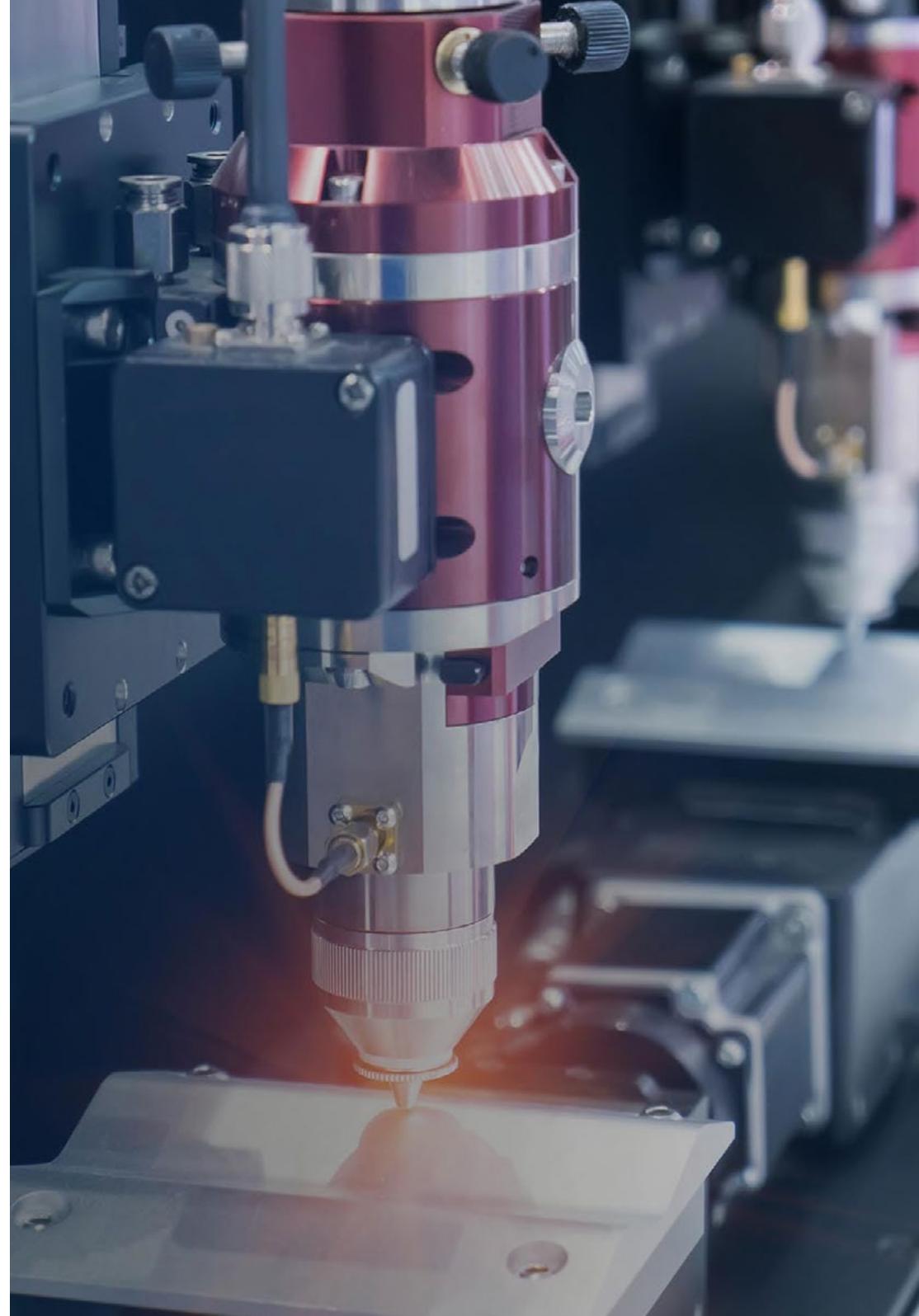
*You will lead Digital Transformation projects based on the latest trends such as the Gartner Hype. All thanks to this 450-hour program!”*



## General Objectives

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- ◆ Conduct a comprehensive analysis of the profound transformation and radical paradigm shift being experienced in the current global digitalization process
- ◆ Provide in-depth knowledge and the necessary technological tools to face and lead the technological leap and the challenges currently present in companies
- ◆ Mastering the digitalization procedures of companies and the automation of their processes to create new fields of wealth in areas such as creativity, innovation and technological efficiency
- ◆ Leading Digital Change





## Specific Objectives

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### Module 1. Industry 4.0

- In-depth study of the key principles of Industry 4.0, the technologies on which they are based and the potential of all of them in their application to the different productive sectors
- Convert any manufacturing facility into a *Smart Factory* and be prepared for the challenges and challenges that come with it

### Module 2. Leading Industry 4.0

- Understand the current virtual era and its leadership capacity, on which the success and survival of digital transformation processes involving any type of industry will depend
- Develop, from all available data, the *Digital Twin* of the facilities/systems/assets integrated in an IoT network

### Module 3. Industry 4.0- Services and Industry Solutions I

- Enter the world of robotics and automation
- Choose a robotic platform, prototype and know in detail simulators and robot operating system (ROS)
- Delve in the applications of artificial intelligence to robotics oriented to predict behaviors and optimize processes
- Study robotics concepts and tools, as well as use cases, real examples and integration with other systems and demonstration

### Module 4. Industry 4.0 Services and Industry Solutions II

- Possess a thorough understanding of the technological impact and how technologies are revolutionizing the tertiary economic sector in the fields of transportation and logistics, health and healthcare (e-Health and *Smart Hospitals*), smart cities, the financial sector (*Fintech*) and mobility solutions
- Know the technological trends of the future



*Practical exercises based on real cases and videos in detail elaborated by the teachers themselves will be the key to your success”*

# 03

# Course Management

TECH's premise is to offer to all people university programs defined by an excellent quality. For the design and delivery of this program, this instruction has brought together leading experts in the areas of Industry 4.0 and Industry Solutions. These professionals have extensive work experience, forming part of renowned international companies. In order to offer the most cutting-edge services, they update their knowledge assiduously to stay at the technological forefront in this technological field. Therefore, students will have access to an academic experience with sophisticated didactic contents that will be of great applicability in their working life.



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*You will be advised at all times  
by the teaching team, formed  
by professionals in Digital  
Transformation and Industry 4.0”*

## Management



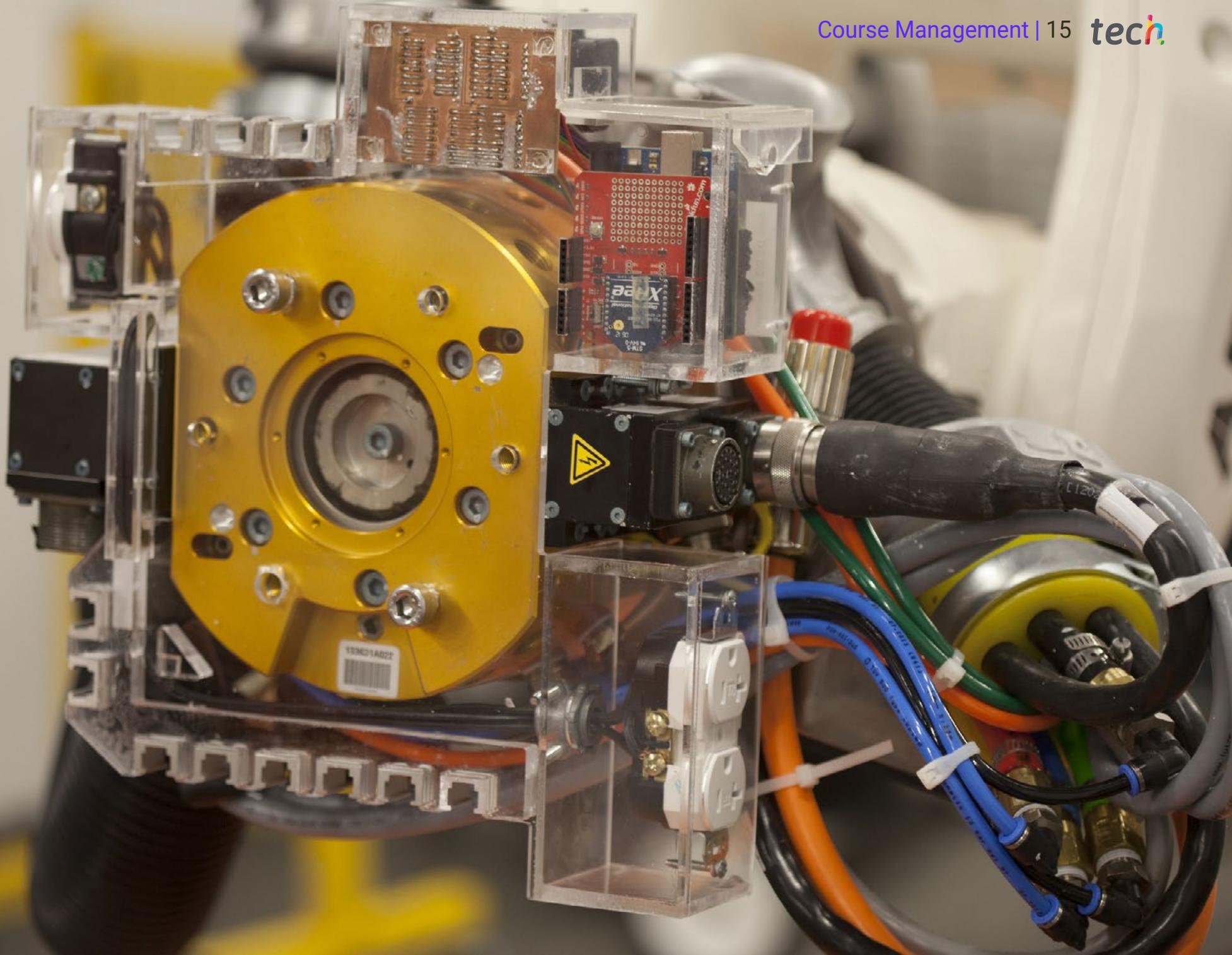
### Dr. Segovia Escobar, Pablo

- ♦ Chief Executive of the Defense Sector in the Company TecnoBit of the Oesía Group
- ♦ Corporate Project Director Indra
- ♦ Master's Degree in Companies Administration and Management by the National University of Distance Education
- ♦ Postgraduate in Strategic Management Function
- ♦ Member of: Spanish Association of People with High Intellectual Quotient



### Dr. Diezma López, Pedro

- ♦ Chief Innovation Officer and CEO of Zerintia Technologies
- ♦ Founder of the technology company Acuilae
- ♦ Member of the Kebala Group for business incubation and promotion
- ♦ Consultant for technology companies such as Endesa, Airbus or Telefónica
- ♦ Wearable "Best Initiative" Award in eHealth 2017 and "Best Technological "Solution" 2018 for occupational safety



# 04

## Structure and Content

This university program will equip students with the most up-to-date knowledge in Industry 4.0 and Sectorial Solutions. To achieve this, the curriculum will focus on the management of innovative technologies aimed at improving the production processes of companies. In line with this, the syllabus will emphasize the relevance of the digitalization of manufacturing while establishing the basis for the creation of Digital Twins. Graduates will perform simulations of various scenarios to identify potential obstacles. The learning materials will also provide roadmaps for digital conversion in various areas such as mining, tourism, transportation, construction or energy.

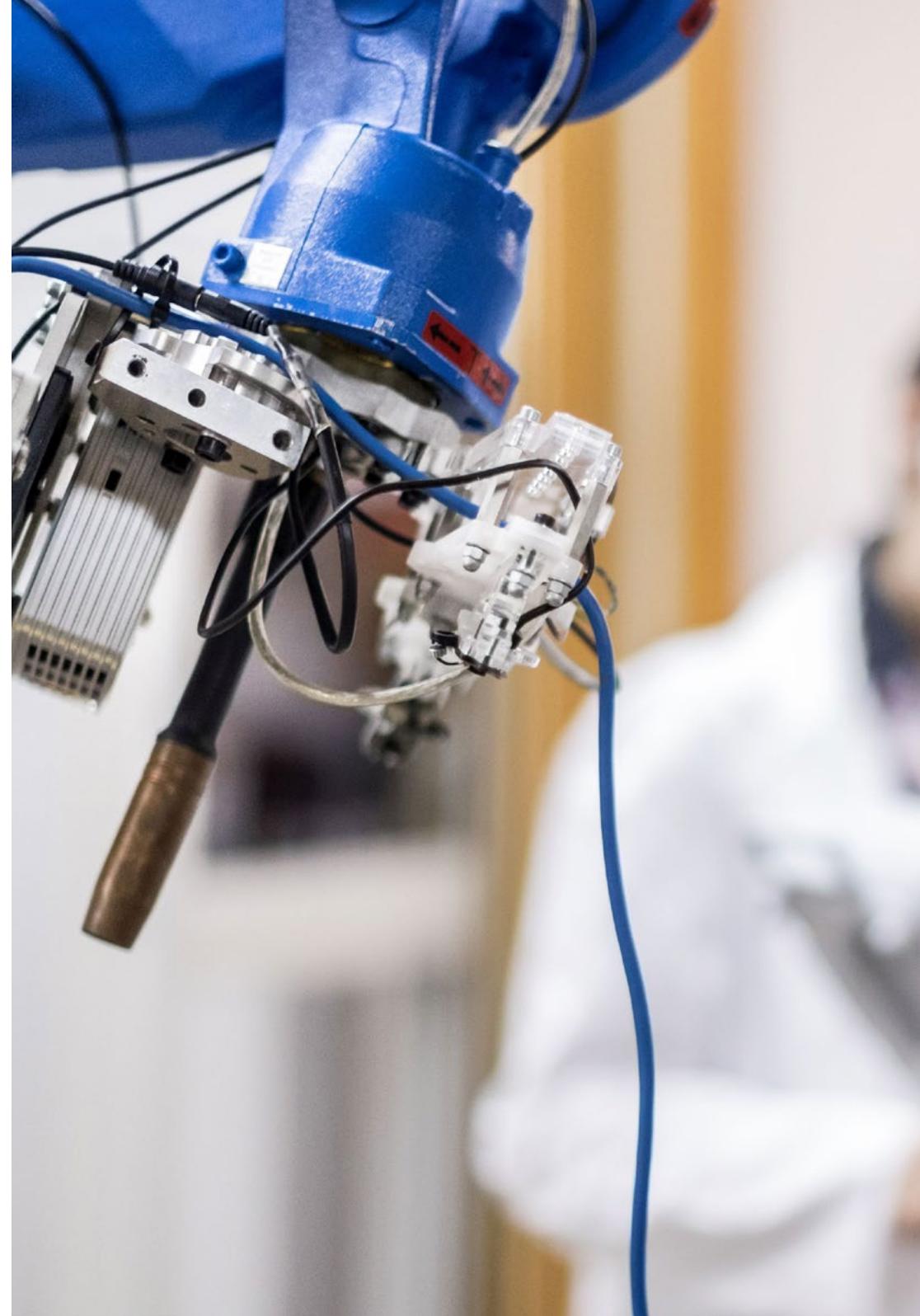


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*Give your career a quality boost by incorporating the latest advances in Process Digitalization into your work procedures”*

## Module 1. 4.0. Industry

- 1.1. Definition of 4.0. Industry
  - 1.1.1. Features
- 1.2. Benefits of the 4.0. Industry
  - 1.2.1. Key Factors
  - 1.2.2. Main Advantages
- 1.3. Industrial Revolutions and Vision of the Future
  - 1.3.1. Industrial Revolutions
  - 1.3.2. Keys Factors in Each Revolution
  - 1.3.3. Technological Principles as a Basis for Possible New Revolutions
- 1.4. The Digital Transformation of the Industry
  - 1.4.1. Characteristics of the Digitization of the Industry
  - 1.4.2. Disruptive Technologies
  - 1.4.3. Applications in the Industry
- 1.5. Forth Industrial Revolution. Key Principles of Industry 4.0
  - 1.5.1. Definitions
  - 1.5.2. Key Principles and Applications
- 1.6. 4.0. Industry and Industrial Internet
  - 1.6.1. Origin of IoT
  - 1.6.2. Operation
  - 1.6.3. Steps to Follow for its Implementation
  - 1.6.4. Benefits
- 1.7. Smart Factory Principles
  - 1.7.1. The Smart Factory
  - 1.7.2. Elements that Define a Smart Factory
  - 1.7.3. Steps to Deploy a Smart Factory
- 1.8. Status of the 4.0. Industry
  - 1.8.1. Status of the 4.0. Industry in Different Sectors
  - 1.8.2. Barriers to the Implementation of 4.0. Industry
- 1.9. Challenges and Risks
  - 1.9.1. SWOT Analysis
  - 1.9.2. Challenges
- 1.10. Role of Technological Capabilities and the Human Factor
  - 1.10.1. Disruptive Technologies in Industry 4.0
  - 1.10.2. The Importance of the Human Factor Key Factor



**Module 2. Leading Industry 4.0**

- 2.1. Leadership Abilities
  - 2.1.1. Leadership Factors in the Human Factor
  - 2.1.2. Leadership and Technology
- 2.2. Industry 4.0 and the Future of Production
  - 2.2.1. Definitions
  - 2.2.2. Production Systems
  - 2.2.3. Future of Digital Production Systems
- 2.3. Effects of Industry 4.0
  - 2.3.1. Effects and Challenges
- 2.4. Essential Technologies in Industry 4.0
  - 2.4.1. Definition of Technologies
  - 2.4.2. Characteristics of Technologies
  - 2.4.3. Applications and Impacts
- 2.5. Digitization of Manufacturing
  - 2.5.1. Definitions
  - 2.5.2. Benefits of the Digitization of Manufacturing
  - 2.5.3. Digital Twins
- 2.6. Digital Capabilities in an Organization
  - 2.6.1. Development Digital Capabilities
  - 2.6.2. Understanding the Digital Ecosystem
  - 2.6.3. Digital Vision of the Business
- 2.7. Architecture Behind a *Smart Factory*
  - 2.7.1. Areas and Operations
  - 2.7.2. Connectivity and Security
  - 2.7.3. Case Uses
- 2.8. Technology Markers in the Post-Covid Era
  - 2.8.1. Technological Challenges in the Post-Covid Era
  - 2.8.2. New Case Uses
- 2.9. The Era of Absolute Virtualization
  - 2.9.1. Virtualisation
  - 2.9.2. The New Era of Virtualization
  - 2.9.3. Advantages
- 2.10. Current Situation in Digital Transformation Gartner Hype
  - 2.10.1. Gartner Hype
  - 2.10.2. Analysis of Technologies and Their Status
  - 2.10.3. Data Exploitation

### Module 3. Industry 4.0– Services and Industry Solutions I

- 3.1. Industry 4.0.and Business Strategies
  - 3.1.1. Factors of Business Digitalization
  - 3.1.2. Roadmap for Business Digitalization
- 3.2. Digitalization of Processes and the Value Chain
  - 3.2.1. Value Chain
  - 3.2.2. Key Steps in the Digitization of Processes
- 3.3. Sector Solutions Primary Sector
  - 3.3.1. The Primary Economic Sector
  - 3.3.2. Characteristics of Each Subsector
- 3.4. Digitization of the Primary Sector: *Smart Farms*
  - 3.4.1. Main Characteristics
  - 3.4.2. Keys Factors of Digitization
- 3.5. Digitization of the Primary Sector: Digital and Intelligent Agriculture
  - 3.5.1. Main Characteristics
  - 3.5.2. Keys Factors of Digitization
- 3.6. Sector Solutions Secondary Sector
  - 3.6.1. The Secondary Economic Sector
  - 3.6.2. Characteristics of Each Subsector
- 3.7. Digitization of the Secondary Sector: *Smart Factory*
  - 3.7.1. Main Characteristics
  - 3.7.2. Keys Factors of Digitization
- 3.8. Digitization of the Secondary Sector: Energy
  - 3.8.1. Main Characteristics
  - 3.8.2. Keys Factors of Digitization
- 3.9. Digitization of the Secondary Sector: Construction
  - 3.9.1. Main Characteristics
  - 3.9.2. Keys Factors of Digitization
- 3.10. Digitization of the Secondary Sector: Mining
  - 3.10.1. Main Characteristics
  - 3.10.2. Keys Factors of Digitization

### Module 4. Industry 4.0. Services and Industry Solutions II

- 4.1. Tertiary Sector Solutions
  - 4.1.1. Tertiary Economic Sector
  - 4.1.2. Characteristics of Each Subsector
- 4.2. Digitalization of the Tertiary Sector: Transportation
  - 4.2.1. Main Characteristics
  - 4.2.2. Keys Factors of Digitization
- 4.3. Digitization of the Tertiary Sector: e-Health
  - 4.3.1. Main Characteristics
  - 4.3.2. Keys Factors of Digitization
- 4.4. Digitization of the Tertiary Sector: *Smart Hospitals*
  - 4.4.1. Main Characteristics
  - 4.4.2. Keys Factors of Digitization
- 4.5. Digitization of the Tertiary Sector: *Smart Cities*
  - 4.5.1. Main Characteristics
  - 4.5.2. Keys Factors of Digitization
- 4.6. Digitalization of the Tertiary Sector: Logistics
  - 4.6.1. Main Characteristics
  - 4.6.2. Keys Factors of Digitization
- 4.7. Digitalization of the Tertiary Sector: Tourism
  - 4.7.1. Main Characteristics
  - 4.7.2. Keys Factors of Digitization



- 4.8. Digitization of the Tertiary Sector: *Fintech*
  - 4.8.1. Main Characteristics
  - 4.8.2. Keys Factors of Digitization
- 4.9. Digitization of the Tertiary Sector: Mobility
  - 4.9.1. Main Characteristics
  - 4.9.2. Keys Factors of Digitization
- 4.10. Future Technological Tendencies
  - 4.10.1. New Technological Innovations
  - 4.10.2. Application Trends

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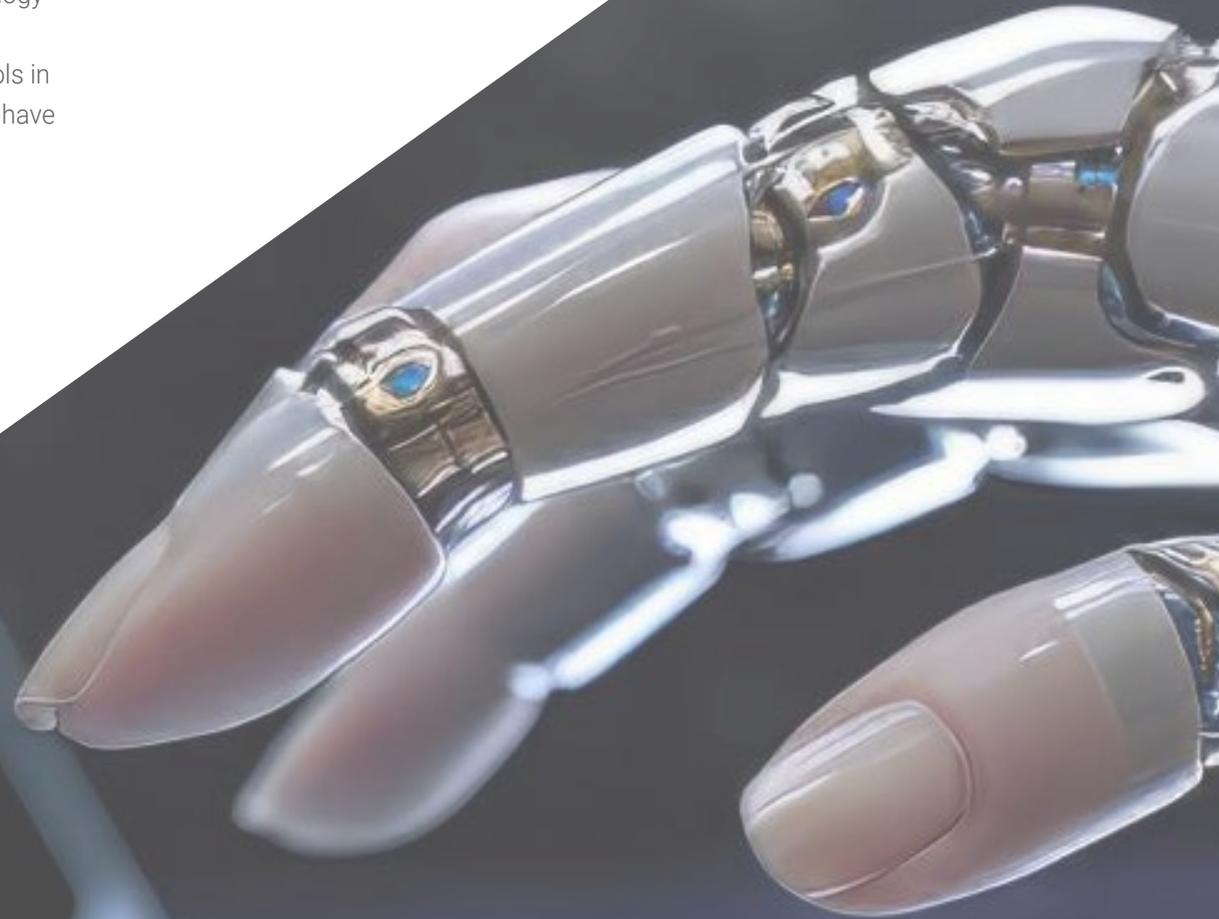
*If you have set yourself the goal of updating your knowledge, TECH gives you the opportunity to achieve it while also making it compatible, with your work responsibilities”*

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"*

## 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 has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. 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 course, students 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 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.



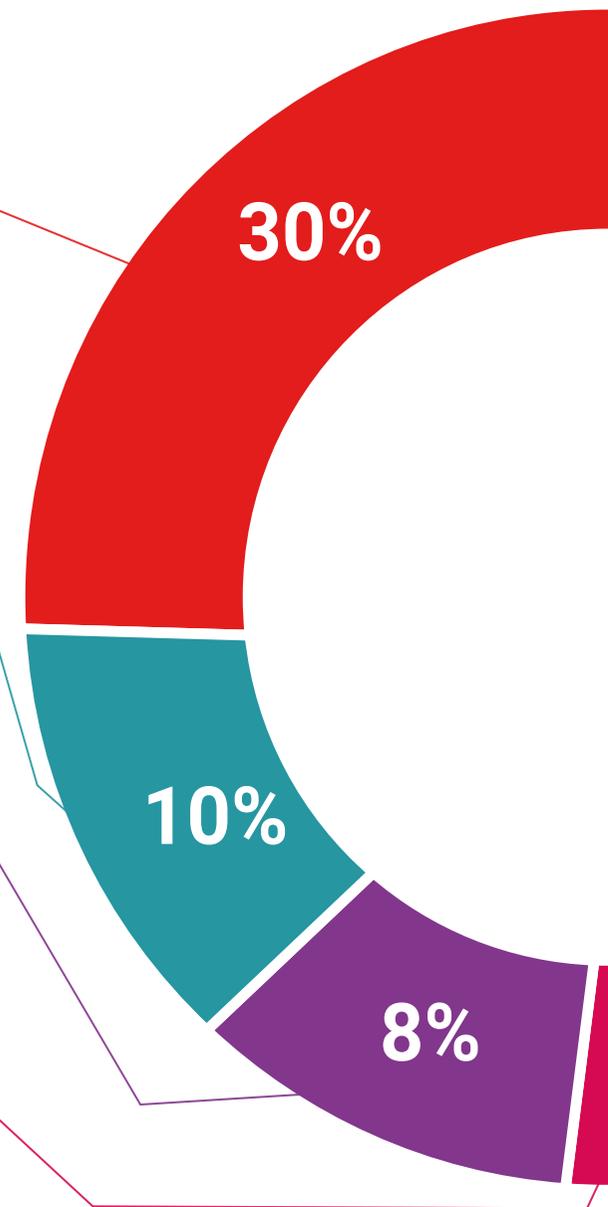
### Practising Skills and Abilities

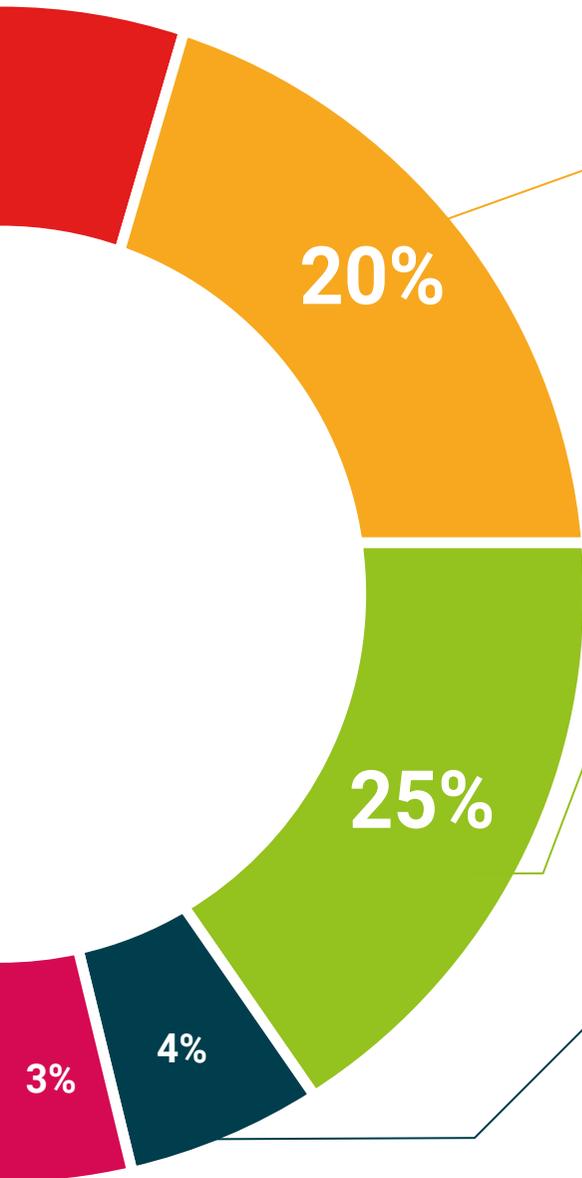
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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.



06

# Certificate

The Postgraduate Diploma in Industry 4.0 and Industry Solutions guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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*Successfully complete this program  
and receive your university qualification  
without having to travel or fill out  
laborious paperwork”*

This program will allow you to obtain your **Postgraduate Diploma in Industry 4.0 and Industry Solutions** endorsed by **TECH Global University**, the world's largest online university.

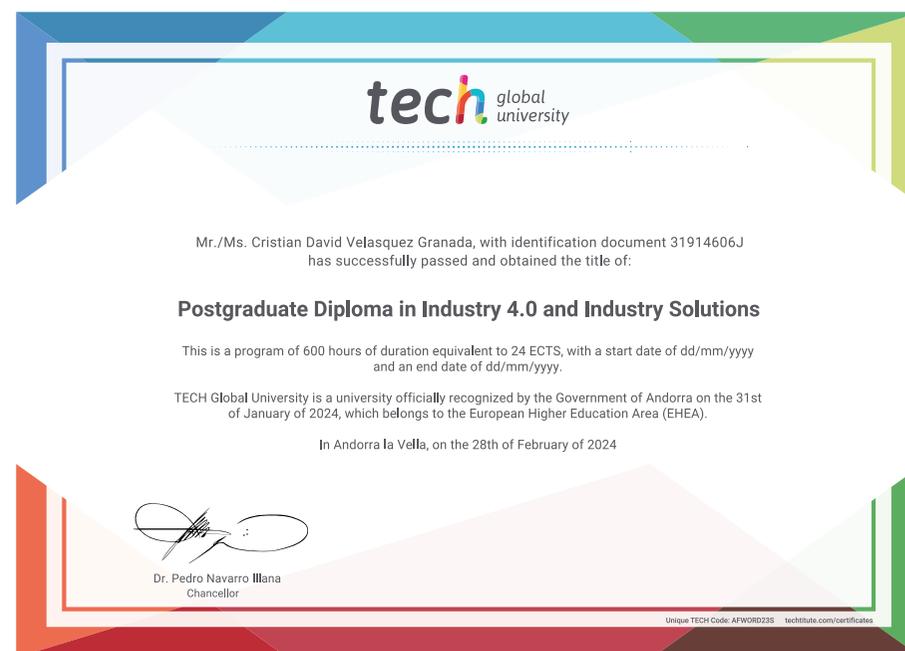
**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international 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 Industry 4.0 and Industry Solutions**

ECTS: **24**

Official N° of Hours: **600 h.**



future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development languages  
virtual classroom



## Postgraduate Diploma Industry 4.0 and Industry Solutions

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- » Duration: **6 months**
- » Certificate: **TECH Global University**
- » Credits: **24 ECTS**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

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