

# Postgraduate Diploma

## Industry 4.0 and Sectorial Solutions





## Postgraduate Diploma Industry 4.0 and Sectorial Solutions

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

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

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# 01

# Introduction

The business strategies of Industry 4.0 and the digitalization factors of its processes are completely changing the primary, secondary and tertiary economic sectors. Therefore, they require professionals with extensive knowledge in the field, and this is the reason why TECH has designed a program that seeks to ensure that this demand is satisfied with trained students with the necessary skills to face their work with maximum efficiency. And this, through a content that addresses topics such as the benefits of Industry 4.0, the smart factory, essential technologies or digitization. All this through a 100% online program with the most up-to-date content on the market.







“

*Enter the world of Industry 4.0 and learn how to master Industry Services and Solutions”*

New business models, new technologies and the so-called Fourth Industrial Revolution imply a production whose products and machines are digitally interconnected, giving rise to concepts such as Industry 4.0 or the smart factory. This reality requires professionals with broad and deep knowledge in an area whose labor demand is constantly increasing.

This is the reason why TECH has created a Postgraduate Diploma in Industry 4.0 and Sectorial Solutions, with which it seeks to provide students with specialized skills and knowledge in one of the areas with the greatest potential in the Engineering sector, so that they can tackle their work as efficiently as possible. And this, through content that addresses topics such as the digital transformation of industry, the principles of the smart factory, digital capabilities in an organization or business strategies in Industry 4.0.

All this, with total freedom on the part of the student, to organize their schedules and studies, as best suits them, without seeing their other obligations interfered with, thanks to a completely online modality. In addition, with the total availability of theoretical and practical content at the forefront of the Engineering and Industry 4.0 sector.

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

- ♦ The development of practical case studies presented by experts in psychology and in education
- ♦ The graphic, schematic, and practical content with which they are created, provides 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
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Enhance your professional profile in a few months and stand out in one of the engineering sectors with the greatest future"*

“

*Completion of this course will equip you with the skills in Essential Technologies in Industry 4.0"*

*Master the key factors of the digitalization of the tertiary sector, wherever and whenever you want.*

*Download all the content of Industry 4.0, with your mobile, tablet or computer.*

The program's teaching staff includes professionals from 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 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

The objective of this Postgraduate Diploma in Industry 4.0 and Sectorial Solutions is to provide students with new and improved skills in this area, in order to guarantee a successful future as an engineering professional. All this, through the most complete and dynamic content in the academic market.







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*A degree that aims to give you the position you deserve in the engineering sector and with which you will be able to stand out in just a few months"*





## 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 companies' digitalization procedures and the automation of their processes to create new fields of wealth in areas such as creativity, innovation and technological efficiency
- ◆ Leading the Digital Change







## Specific Objectives

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### Module 1. Industry 4.0

- ◆ Analyze the origins of the so-called Fourth Industrial Revolution and the Industry 4.0 concept
- ◆ 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 that come with it

### Module 2. Leading Industry 4.0

- ◆ Understand the current virtual era we live in and its leadership capacity, on which the success and survival of the digital transformation processes will depend, on which any type of industry is involved
- ◆ 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 Sectorial Solutions I

- ◆ Conduct an exhaustive analysis of the practical application that emerging technologies are having in the different economic sectors and in the value chain of their main industries
- ◆ In-depth knowledge of the primary and secondary economic sectors, as well as the technological impact they are experiencing
- ◆ Find out how technologies are revolutionizing the agricultural, livestock, industrial, energy and construction sectors

### Module 4. Industry 4.0. Services and 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 about the technological trends of the future



# 03

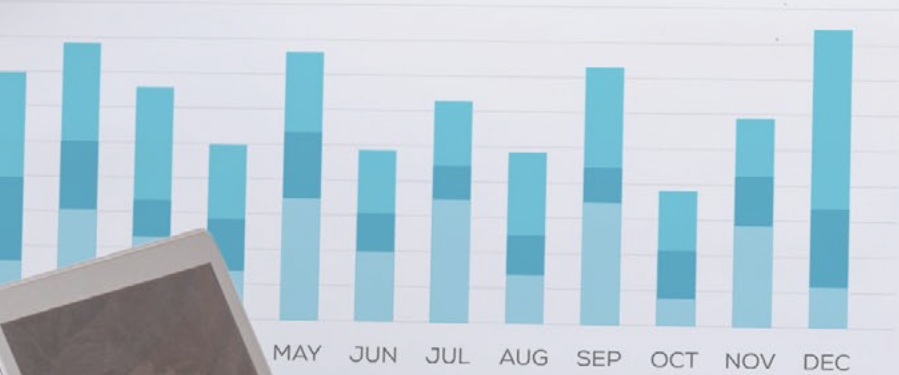
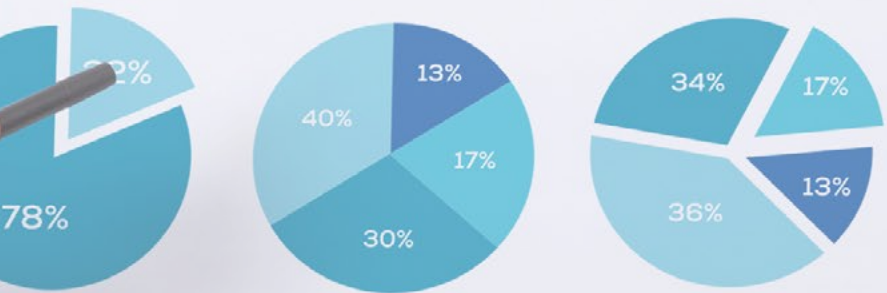
# Course Management

This Postgraduate Diploma in Industry 4.0 and Sectorial Solutions has a teaching staff and management that have been selected by TECH, as part of its team of experts in the field. In this way, these professionals have designed theoretical and practical content at the forefront of the sector and that represent a unique opportunity for students.





2011 2012 2013 2014 2015 2016 2017



“

*TECH experts will accompany you throughout the learning process and will resolve all your doubts and queries”*

## 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

## Professors

### Ms. Sánchez López, Cristina

- ♦ CEO and founder of Acuilae
- ♦ Artificial Intelligence consultant at ANHELA IT
- ♦ Creator of Etyka Software for Computer System Security
- ♦ (Software Engineer) for the Accenture Group in large clients such as Bank of Santander, BBVA, Endesa or Barclays Bank.
- ♦ Master's Degree in Data Science at KSchool
- ♦ Degree in Statistics from the Complutense University Madrid

### Mr. Montes, Armando

- ♦ Expert in drones, robots , electronics and 3D printers
- ♦ EMERTECH collaborator developing technology products such as Smart Vest
- ♦ Ordering and Customer Fulfillment Specialist for GE Renewable Energy
- ♦ CEO of the School of Superheroes Foundation related to 3D Printing and Smart Robot Implementation and the Implementation of Smart Robots

### Mr. Castellano Nieto, Francisco

- ♦ Head of Indra Company Maintenance Area
- ♦ Consultant for Siemens AG, Allen-Bradley at Rockwell Automation and other companies
- ♦ Industrial Electronic Technical Engineer by the Universidad Pontificia Comillas

### Mr. Asenjo Sanz, Álvaro

- ♦ IT Consultant for Capitole Consulting
- ♦ Project Manager for Kolokium Blockchain Technologies
- ♦ IT Engineer for Aubay, Tecnocom, Humantech, Ibermatica and Acens Technologies
- ♦ Degree from Computer Engineering of Systems at the Complutense University of Madrid

### Mr. González Cano, José Luis

- ♦ Lighting Designer
- ♦ Vocational training teacher in electronic systems, telematics (CISCO certified instructor), radio communications, IoT
- ♦ Degree in Optics and Optometry from the Complutense University of Madrid
- ♦ Industrial Electronics Technician by Netecad Academy
- ♦ Member of: The Professional Association of Lighting Designers (Technical Consultant) and Member of the Spanish Lighting Committee

# 04

# Structure and Content

The structure and all the teaching resources of this syllabus have been designed by the renowned professionals that make up TECH's team of experts in the area of Engineering and 4.0 Industry. In this way, they have created teaching materials that meet the highest expectations, based on the Relearning pedagogical methodology, which guarantees an optimal assimilation of the contents by the students, in a natural, progressive and direct way.







“

*Enroll now and acquire new knowledge in Industry 4.0 in an agile, progressive and natural way, thanks to TECH Relearning”*

## Module 1. Industry 4.0

- 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 IIoT
  - 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. 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. Virtualization
  - 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 Sectorial 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. Sectorial 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. Sectorial 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 - Industry Services and Solutions (II)

- 4.1. Tertiary Sector Solutions
  - 4.1.1. Tertiary Economic Sector
  - 4.1.2. Characteristics of Each Subsector
- 4.2. Digitization of the Tertiary Sector: Transport
  - 4.2.1. Main Characteristics
  - 4.2.2. Keys Factors of Digitization
- 4.3. Digitization of the Tertiary Sector: eHealth
  - 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. Digitization of the Tertiary Sector: Logistics
  - 4.6.1. Main Characteristics
  - 4.6.2. Keys Factors of Digitization
- 4.7. Digitization 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

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 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.





06

# Certificate

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







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

This **Postgraduate Diploma in Industry 4.0 and Sectorial Solutions** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they 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 meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Industry 4.0 and Sectorial Solutions**

Official N° of Hours: **600 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.

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 Sectorial Solutions

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

# Postgraduate Diploma Industry 4.0 and Sectorial Solutions

