

# Postgraduate Certificate Industry 4.0 and Business Intelligence. The Digitalized Industrial Enterprise





## Postgraduate Certificate Industry 4.0 and Business Intelligence The Digitalized Industrial Enterprise

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

Website: [www.techtute.com/pk/engineering/postgraduate-certificate/industry-4-0-business-intelligence-digitalized-insutrial-enterprise](http://www.techtute.com/pk/engineering/postgraduate-certificate/industry-4-0-business-intelligence-digitalized-insutrial-enterprise)

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# 01

# Introduction

Digital companies are increasingly present in society. However, these digitalization processes have also reached industries that, by their very function, will always need a physical space for the creation, storage and distribution of their goods. and distribution of their goods. However, in these cases, new technologies have emerged to facilitate and streamline procedures, achieving greater speed, security and effectiveness at every step. This TECH program has been designed so that engineers can enter, with full guarantees of success, in the process of digitization of companies, to become real industries 4.0 for which *Business Intelligence* tools are applied.



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*Get to know in depth the digitization process of industries and learn how to use Business Intelligence tools in your daily practice”*

Current industries are becoming more and more automated in their production processes, so middle managers and executives must have the necessary training to know and be able to handle automation concepts and not be left behind in the new era of Industry 4.0. In this regard, it is very important to know the different management software of the different departments of the companies to be able to interpret them and integrate them into the *Business Intelligence* field. For this purpose, the cross-cutting solution that is gaining ground in the business world for data-driven analysis, management and decision making is the use of business intelligence software. Other programs can also be used to optimize processes.

All these new tools that have emerged in the framework of the digitalization of industries is what TECH Technological University has gathered in this Postgraduate Certificate, so that engineers who wish to increase in this field can find, in a single program, all the relevant aspects that will be very useful for their work practice, adapting their knowledge to the needs of society and current markets.

In order to improve the knowledge of professionals in the sector, TECH Technological University has developed this Postgraduate Certificate, which combines theoretical aspects and an eminently practical approach that provides engineers with the acquisition of a deep knowledge of the reality of the digital company. In this way, this Postgraduate Certificate will provide the professional with the capacity and tools necessary to efficiently manage all aspects related to industrial management in order to be able to compete adequately both in the present and in a future full of challenges, opportunities and changes. Ultimately, the program will totally online provide engineering professionals a knowledge update that will place them at the forefront of the latest developments in every relevant branch of knowledge.

This **Postgraduate Certificate in Industry 4.0 and Business Intelligence. The Digitalized Industrial Enterprise** contains the most complete and up-to-date academic program on the market. Its most notable features are:

- ◆ The development of practical cases presented by experts in *Industrial Management*
- ◆ The graphic, schematic, and 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 in *Industrial Management*
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*The accomplishment of this Postgraduate Certificate will be a great asset for you to improve your competitiveness and to be able to work with total confidence in digitalized industries"*

“*TECH Technological University provides you with a multitude of theoretical and practical resources for you to carry out a contextual study to improve your training*”

Its teaching staff includes professionals from the field of engineering, who contribute their work experience to this program, as well as renowned specialists from leading companies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow professionals to learn in a contextual and situated learning environment, i.e., a simulated environment that will provide immersive specialization for real situations.

This program is designed around Problem-Based Learning, whereby the Engineer must try to solve the different professional practice situations that arise during the academic year. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

*The online format of this program will allow you to balance your studies with the rest of your daily obligations.*

*Delve into the digitalization process of your company and develop the necessary skills to manage it successfully.*



# 02 Objectives

The main objective of this TECH program is to offer a higher qualification to engineering professionals working in the field of industrial companies, so that they can learn first-hand about the digitalization process that companies are currently undergoing. Therefore, by studying this Postgraduate Certificate, you will be able to get up to date with the main developments of Industry 4.0 and Business Intelligence.





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*A high-quality program designed to help you meet your academic goals”*



## General Objectives

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- ◆ Apply the main strategic keys to better compete in current and future times
- ◆ Master the tools to achieve excellence in the sector
- ◆ Define business strategies and deployment in an organization, process management, and structural typology to better adapt to changes
- ◆ Manage the projects presented with both conventional and agile methodologies
- ◆ Better manage all the necessary steps and phases in the design and development of new products
- ◆ Perform production planning and control with the objective of optimizing resources and adapting to demand as well as possible
- ◆ Manage quality throughout the organization and apply the most important tools for continuous improvement of products and processes



*Industries are shifting towards digitization, which is why higher qualification in this a must"*





## Specific Objectives

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- ◆ Lead and face the new business models and challenges associated with the development and implementation of Industry 4.0
- ◆ Learn more about the need for digital transformation suggested by the new business challenges to successfully face the near future
- ◆ In-depth knowledge and auditing of industrial automation projects as a fundamental part of today's production and management processes
- ◆ Identify and interpret the management software used in company departments
- ◆ Identify software that provides a global and transversal vision of a company or business
- ◆ Discover the importance of data in the oversight, monitoring, management and improvement of a company
- ◆ Establish how machine learning and artificial intelligence techniques can contribute to solve a company's problems and to define and project its future

# 03

# Course Management

TECH has selected a high-level faculty for this Industry 4.0 and Business Intelligence Postgraduate Certificate. Digitized Industrial Companies. They are professionals with extensive experience, who understand the need to continuously update their knowledge in order to develop with ease in an industry that changes frequently. For this purpose, they have selected the most relevant information in this field, which is essential to improve the competitiveness of both the employee and the company in which they work.





“

*Leading faculty members have joined forces to show you the latest concepts in digitalized industries”*

## Management



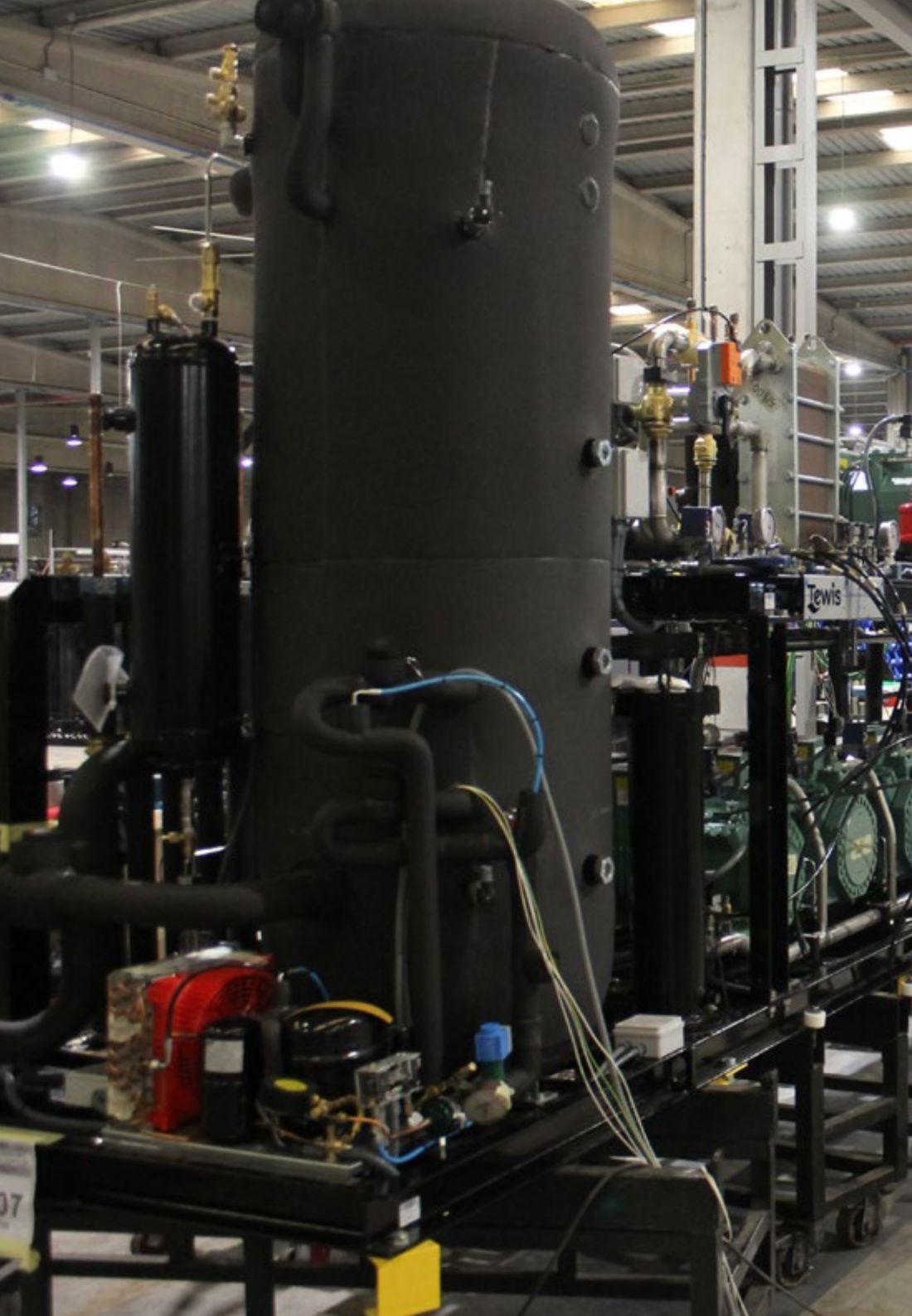
### Dr. Asensi, Francisco Andrés

- ♦ Business consultant and specialist in Industrial Management and Digital Transformation
- ♦ Production and Logistics Coordinator at IDAI NATURE
- ♦ Coach in Strategic Coaching
- ♦ Organization Manager for Talleres Lemar
- ♦ Organization and Management of companies for Lab Radio SA
- ♦ PhD in Industrial Engineering in Business Organization from the University of Castilla la Mancha
- ♦ Degree Industrial in Industrial Organization Engineer from the University Polytechnic of Valencia

## Professors

### Mr. Del Olmo, Daniel

- ♦ Chief Technologist at Enira Engineering S.L
- ♦ Head of Plant Engineering at NHK-SOGEFI
- ♦ Technical Development and Maintenance Manager at Sealed Air Corporation
- ♦ Responsible for Plant Engineering at SRG Global
- ♦ Responsible at Toyota Production System
- ♦ Process Engineer at Zodiac Aerospace
- ♦ Project engineer in Serfruit S.A. and Greefa
- ♦ Professor MBA in Operations, European University of Valencia



“TECH has carefully selected the faculty for this program so that you can learn from today's top specialists”

# 04

# Structure and Content

The structure of this TECH program has been designed with the specialization needs of engineering professionals in mind, who demand high-quality curricula, but in a more flexible format than traditional schools. In this way, the student will be able to make an academic journey through the main concepts of Industry 4.0 and Business Intelligence, but in a 100% online format, indispensable in the 21st century.







“ A A very well-structured syllabus that will be fundamental to your professional development”

**Module 1. Industry 4.0. and Business Intelligence. The Digitized Company**

- 1.1. Automation and Industrial Robotics
  - 1.1.1. Process Automation Phases
  - 1.1.2. Industrial Hardware for Automation and Robotics
  - 1.1.3. The Work Cycle and Its Software Programming
- 1.2. Process Automation: RPA
  - 1.2.1. Administrative Processes that Can Be Automated
  - 1.2.2. Software Structure
  - 1.2.3. Application Examples
- 1.3. MES, SCADA, CMMS, WMS, MRPII Systems
  - 1.3.1. Production Control with MES Systems
  - 1.3.2. Engineering and Maintenance: SCADA AND CMMS
  - 1.3.3. Procurement and Logistics: WMS and MPRII
- 1.4. *Business Intelligence* Software
  - 1.4.1. BI Fundamentals
  - 1.4.2. Software Structure
  - 1.4.3. Possibilities of Its Implementation
- 1.5. Software ERP
  - 1.5.1. ERP Description
  - 1.5.2. Scope of Use
  - 1.5.3. Main ERP on the Market
- 1.6. IoT and *Business Intelligence*
  - 1.6.1. IoT: the Connected World
  - 1.6.2. Data Sources
  - 1.6.3. Control Using IoT + BI
  - 1.6.4. *Blockchain*





- 1.7. Main BI Software on the Market
  - 1.7.1. PowerBI
  - 1.7.2. Qlik
  - 1.7.3. Tableau
- 1.8. Microsoft Power BI
  - 1.8.1. Features
  - 1.8.2. Application Examples
  - 1.8.3. The Future of PowerBI
- 1.9. Machine Learning, Artificial Intelligence, Optimization and Prediction in Companies
  - 1.9.1. *Machine Learning* and Artificial Intelligence
  - 1.9.2. Process Optimization
  - 1.9.3. The Importance of Data-Driven *Forecasting*
- 1.10. Big Data Applied to Business Environments
  - 1.10.1. Applications in the Production Environment
  - 1.10.2. Applications in Strategic Management
  - 1.10.3. Marketing and Sales Applications



*Completion of this program will expand your employability”*

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.

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*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.



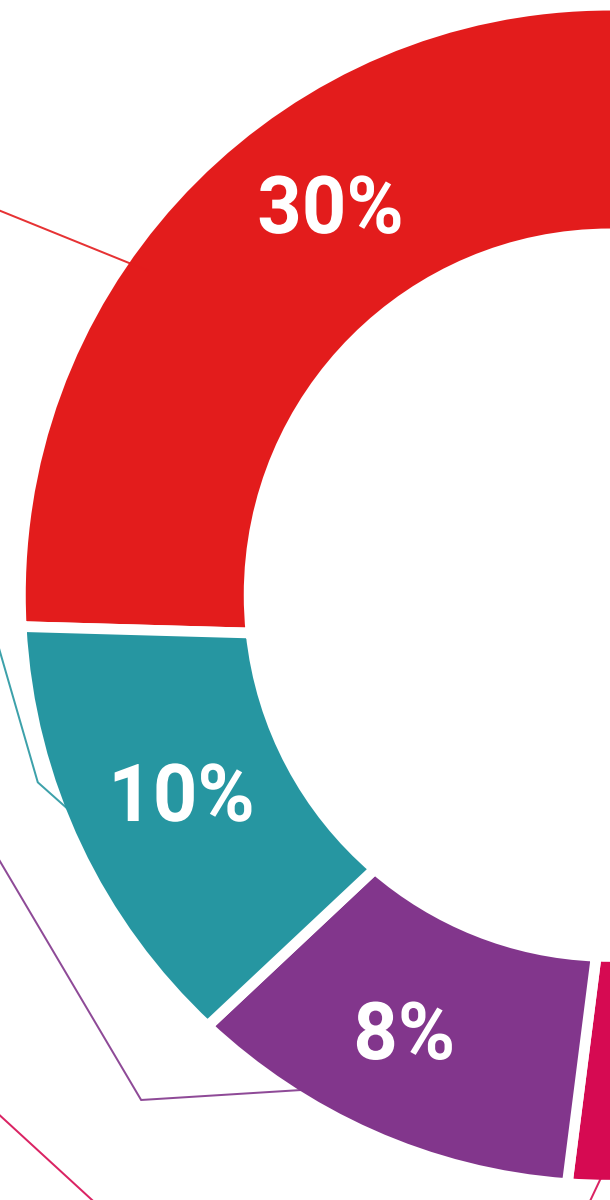
### Practising Skills and Abilities

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 Certificate in Industry 4.0 and Business Intelligence. The Digitalized Industrial Enterprise guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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 Certificate in Industry 4.0 and Business Intelligence. The Digitalized Industrial Enterprise** contains the most complete and up-to-date academic program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Postgraduate Certificate in Industry 4.0 and Business Intelligence. The Digitalized Industrial Enterprise**

Official N° of Hours: **150 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.



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