

# Postgraduate Certificate

## Industry 4.0 and Business Intelligence: Digitized Industrial Companies





## Postgraduate Certificate Industry 4.0 and Business Intelligence: Digitized Industrial Companies

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online
- » Aimed at: engineers and graduates with experience who want to improve and update themselves in all the necessary aspects to be taken into account for an adequate management Competitive Games of an Industrial company.

Website: [www.techtute.com/pk/school-of-business/postgraduate-certificate/industry-4-0-business-intelligence-digitized-industrial-companies](http://www.techtute.com/pk/school-of-business/postgraduate-certificate/industry-4-0-business-intelligence-digitized-industrial-companies)

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# 01 Welcome

Nowadays, it is no secret that companies seek to reduce the number of employees hired to the minimum feasible. This is largely due to the automation and digitalization processes that make it possible for many of the jobs that used to require a person to operate to now be performed by a computer or machine. In this sense, this educational program will focus on helping students to learn and work with automation models in order not to be left behind in the new era of Industry 4.0



Postgraduate Certificate in Industry 4.0 and Business Intelligence: Digitized Industrial Companies. TECH Technological University



“

*Learn to work with complete automation models and turn your company into a benchmark in Industry 4.0 by studying this complete program"*

02

# Why Study at TECH?

TECH is the world's largest 100% online business school. It is an elite business school, with a model based on the highest academic standards. A world-class centre for intensive managerial skills training.



“

*TECH is a university at the forefront of technology, and puts all its resources at the student's disposal to help them achieve entrepreneurial success"*

## At TECH Technological University



### Innovation

The university offers an online learning model that combines the latest educational technology with the most rigorous teaching methods. A unique method with the highest international recognition that will provide students with the keys to develop in a rapidly-evolving world, where innovation must be every entrepreneur's focus.

"Microsoft Europe Success Story", for integrating the innovative, interactive multi-video system.



### The Highest Standards

Admissions criteria at TECH are not economic. Students don't need to make a large investment to study at this university. However, in order to obtain a qualification from TECH, the student's intelligence and ability will be tested to their limits. The institution's academic standards are exceptionally high...

**95%** | of TECH students successfully complete their studies



### Networking

Professionals from countries all over the world attend TECH, allowing students to establish a large network of contacts that may prove useful to them in the future.

**100,000+**  
executives trained each year

**200+**  
different nationalities



### Empowerment

Students will grow hand in hand with the best companies and highly regarded and influential professionals. TECH has developed strategic partnerships and a valuable network of contacts with major economic players in 7 continents.

**500+** | collaborative agreements with leading companies



### Talent

This program is a unique initiative to allow students to showcase their talent in the business world. An opportunity that will allow them to voice their concerns and share their business vision.

After completing this program, TECH helps students show the world their talent.



### Multicultural Context

While studying at TECH, students will enjoy a unique experience. Study in a multicultural context. In a program with a global vision, through which students can learn about the operating methods in different parts of the world, and gather the latest information that best adapts to their business idea.

TECH students represent more than 200 different nationalities.



TECH strives for excellence and, to this end, boasts a series of characteristics that make this university unique:



### Analysis

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TECH explores the student's critical side, their ability to question things, their problem-solving skills, as well as their interpersonal skills.



### Academic Excellence

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TECH offers students the best online learning methodology. The university combines the Relearning method (a postgraduate learning methodology with the highest international rating) with the Case Study. A complex balance between tradition and state-of-the-art, within the context of the most demanding academic itinerary.



### Economy of Scale

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TECH is the world's largest online university. It currently boasts a portfolio of more than 10,000 university postgraduate programs. And in today's new economy, **volume + technology = a groundbreaking price**. This way, TECH ensures that studying is not as expensive for students as it would be at another university.



### Learn with the best

---

In the classroom, TECH's teaching staff discuss how they have achieved success in their companies, working in a real, lively, and dynamic context. Teachers who are fully committed to offering a quality specialization that will allow students to advance in their career and stand out in the business world.

Teachers representing 20 different nationalities.



*At TECH, you will have access to the most rigorous and up-to-date case studies in the academic community"*

03

# Why Our Program?

Studying this TECH program means increasing the chances of achieving professional success in senior business management.

It is a challenge that demands effort and dedication, but it opens the door to a promising future. Students will learn from the best teaching staff and with the most flexible and innovative educational methodology.



“

*We have highly qualified teachers and the most complete syllabus on the market, which allows us to offer you training of the highest academic level"*

This program will provide students with a multitude of professional and personal advantages, particularly the following:

**01**

### A significant career boost

By studying at TECH, students will be able to take control of their future and develop their full potential. By completing this program, students will acquire the skills required to make a positive change in their career in a short period of time.

*70% of participants achieve positive career development in less than 2 years.*

**02**

### Develop a strategic and global vision of companies

TECH offers an in-depth overview of general management to understand how each decision affects each of the company's different functional areas.

*Our global vision of companies will improve your strategic vision.*

**03**

### Consolidate the student's senior management skills

Studying at TECH means opening the doors to a wide range of professional opportunities for students to position themselves as senior executives, with a broad vision of the international environment.

*You will work on more than 100 real senior management cases.*

**04**

### Take on new responsibilities

The program will cover the latest trends, advances and strategies, so that students can carry out their professional work in a changing environment.

*45% of graduates are promoted internally.*

05

### Access to a powerful network of contacts

TECH connects its students to maximize opportunities. Students with the same concerns and desire to grow. Therefore, partnerships, customers or suppliers can be shared.

*You will find a network of contacts that will be instrumental for professional development.*

06

### Thoroughly develop business projects

Students will acquire a deep strategic vision that will help them develop their own project, taking into account the different areas in companies.

*20% of our students develop their own business idea.*

07

### Improve soft skills and management skills

TECH helps students apply and develop the knowledge they have acquired, while improving their interpersonal skills in order to become leaders who make a difference.

*Improve your communication and leadership skills and enhance your career.*

08

### Be part of an exclusive community

Students will be part of a community of elite executives, large companies, renowned institutions, and qualified professors from the most prestigious universities in the world: the TECH Technological University community.

*We give you the opportunity to train with a team of world renowned teachers.*

# 04 Objectives

This program is designed with the objective of strengthening the student's capabilities in everything related to the improvement of processes based on the automation that the digital era allows, in addition to developing new skills that will be essential in their professional development. Thus, after completing the program, the professional will be able to make global decisions with an innovative perspective and an international vision, always taking into account the importance of working efficiently by aligning all resources to achieve the objectives set by the company



“

*If your objective is to grow within a booming sector, mastering in depth everything related to automation processes, then this Postgraduate Certificate is for you"*

## The students' objectives are TECH's too Working together to achieve them

The Postgraduate Certificate in Industry 4.0 and Business Intelligence: Digitized Industrial Companies enables students to:

01

Lead and face the new business models and challenges associated with the development and implementation of Industry 4.0.

02

Learn more about the need for digital transformation suggested by the new business challenges to successfully face the near future

03

In-depth knowledge and auditing of industrial automation projects as a fundamental part of today's production and management processes







04

Identify and interpret the management software of the different departments of a current company

05

Identify the software that allows you to obtain a global and transversal vision of a company or business

06

Discover the importance of data in the control, monitoring, management and improvement of the company

05

# Structure and Content

The Postgraduate Certificate in Industry 4.0 and Business Intelligence: Digitized Industrial Companies is a program designed based on the current needs of professionals, and is taught in a 100% online format so that students can choose the time and place that best suits their availability, schedules and interests. In addition, by studying this program the student will have access to the most complete and up-to-date content compendium on the market. All this, in a syllabus that is developed over 6 weeks and that aims to be a unique and stimulating experience that lays the foundations for the student's professional success



“

*Welcome to the educational program  
that will lay the foundation for your  
professional growth"*

## Syllabus

Today, it is a fact that companies have fewer and fewer workers and are more automated in their production processes, therefore, middle managers and managers must be more and more accustomed to knowing and handling automation concepts to avoid being left behind in the new era of industry 4.0

Firstly, it is very important to know the different pieces of management software of the different departments of the companies to be able to interpret them, and secondly, to be able to integrate them later in a Business Intelligence software. Among all of them, the cross-cutting solution that has been gaining ground in the business world for the analysis, management and decision making based on data: Business Intelligence Software

Moreover, after having carried out a massive collection of our business data, we can apply two tools that can make the difference with respect to our competition: Optimization and prediction

All this, condensed in a program that stands out for being taught in 100% online mode, to give the student the possibility of studying wherever and whenever they want. In this way, they will only need an electronic device with internet access to access the most complete and up-to-date content bank in the international academic market

To achieve this, companies must use the best tools to reach a competitive and efficient management level in order to be able to adapt at all times to the needs of the market. This Postgraduate Certificate teaches the necessary tools and knowledge to achieve this adaptation and to be able to compete in the best conditions

This Postgraduate Certificate is developed over 6 weeks and is divided into 1 module:

### Module 1

Industry 4.0 and Business Intelligence. Digitized Companies



### Where, when and how is it taught?

TECH offers you the possibility of taking this program completely online. Over the 6 months of the program, the student will be able to access all the contents of this program at any time, which will allow them to self-manage study time

*A unique, key, and decisive educational experience to boost your professional development and make the definitive leap.*

**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. Power BI
- 1.7.2. Qlik
- 1.7.3. Tableau

**1.8. *Microsoft Power Bi***

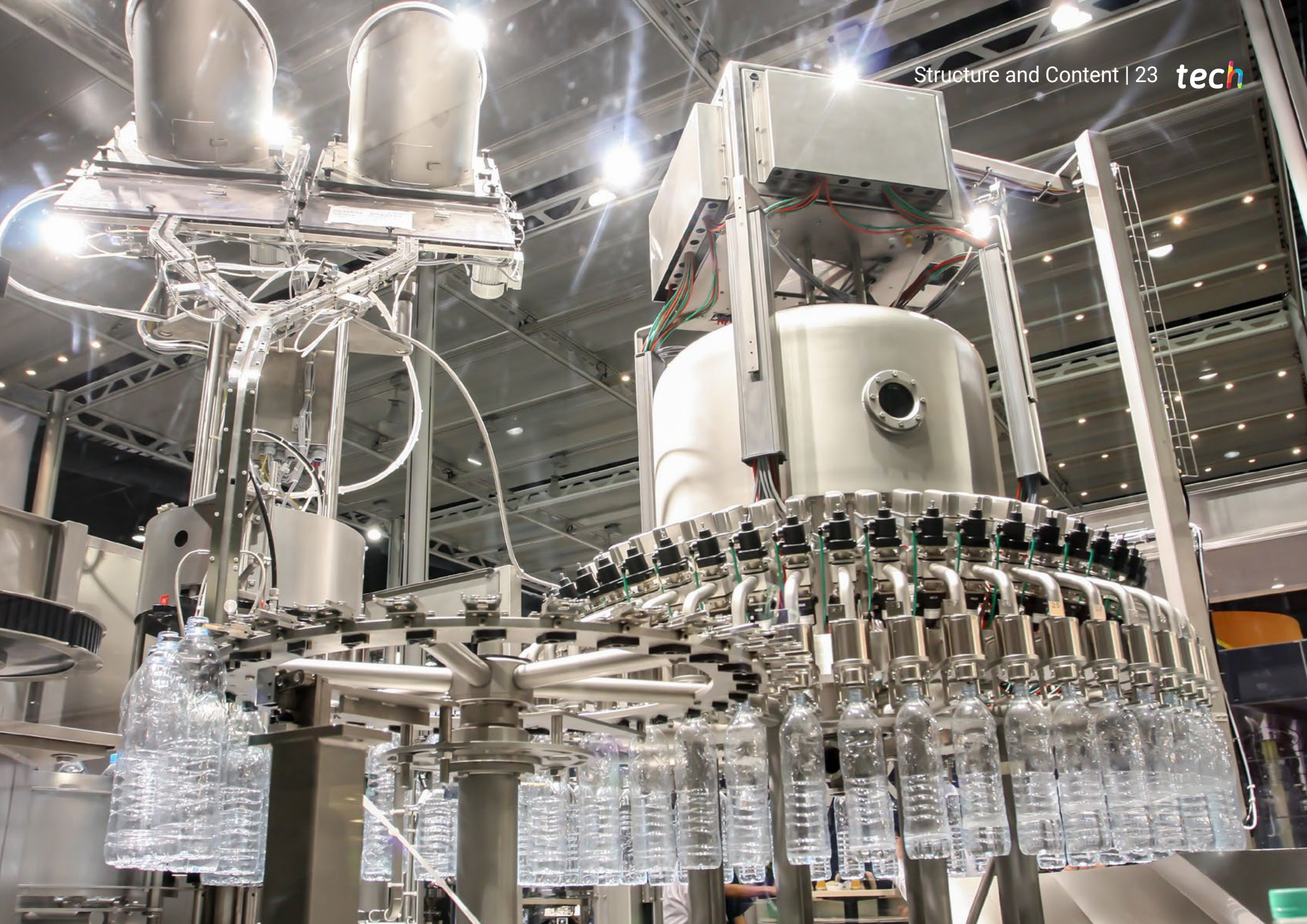
- 1.8.1. Features
- 1.8.2. Application Examples
- 1.8.3. The Future of *Power Bi*

**1.9. Machine Learning, Artificial Intelligence, Optimization and Prediction in the Company**

- 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 the Business Environment**

- 1.10.1. Applications in the Production Environment
- 1.10.2. Applications at the Strategic Management Level
- 1.10.3. Marketing and Sales Applications



# 06

# 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"*

## TECH Business School uses the 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”*



*This program prepares you to face business challenges in uncertain environments and achieve business success.*



### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch to present executives with challenges and business decisions at the highest level, whether at the national or international level. 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 business reality is taken into account.

**“** *You will learn, through collaborative activities and real cases, how to solve complex situations in real business environments”*

The case method has been the most widely used learning system among the world's leading business 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 we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They must integrate all their knowledge, research, argue and defend their ideas and decisions.

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

## 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.

*Our online system will allow you to organize your time and learning pace, adapting it to your schedule. You will be able to access the contents from any device with an internet connection.*

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 online business school is the only one in the world licensed to incorporate 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.

With this methodology we have 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, markets, and financial 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 specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to 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.



### Management Skills Exercises

They will carry out activities to develop specific executive competencies in each thematic area. Practices and dynamics to acquire and develop the skills and abilities that a high-level manager needs to develop in the context of the globalization we live in.



### 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 senior management 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.



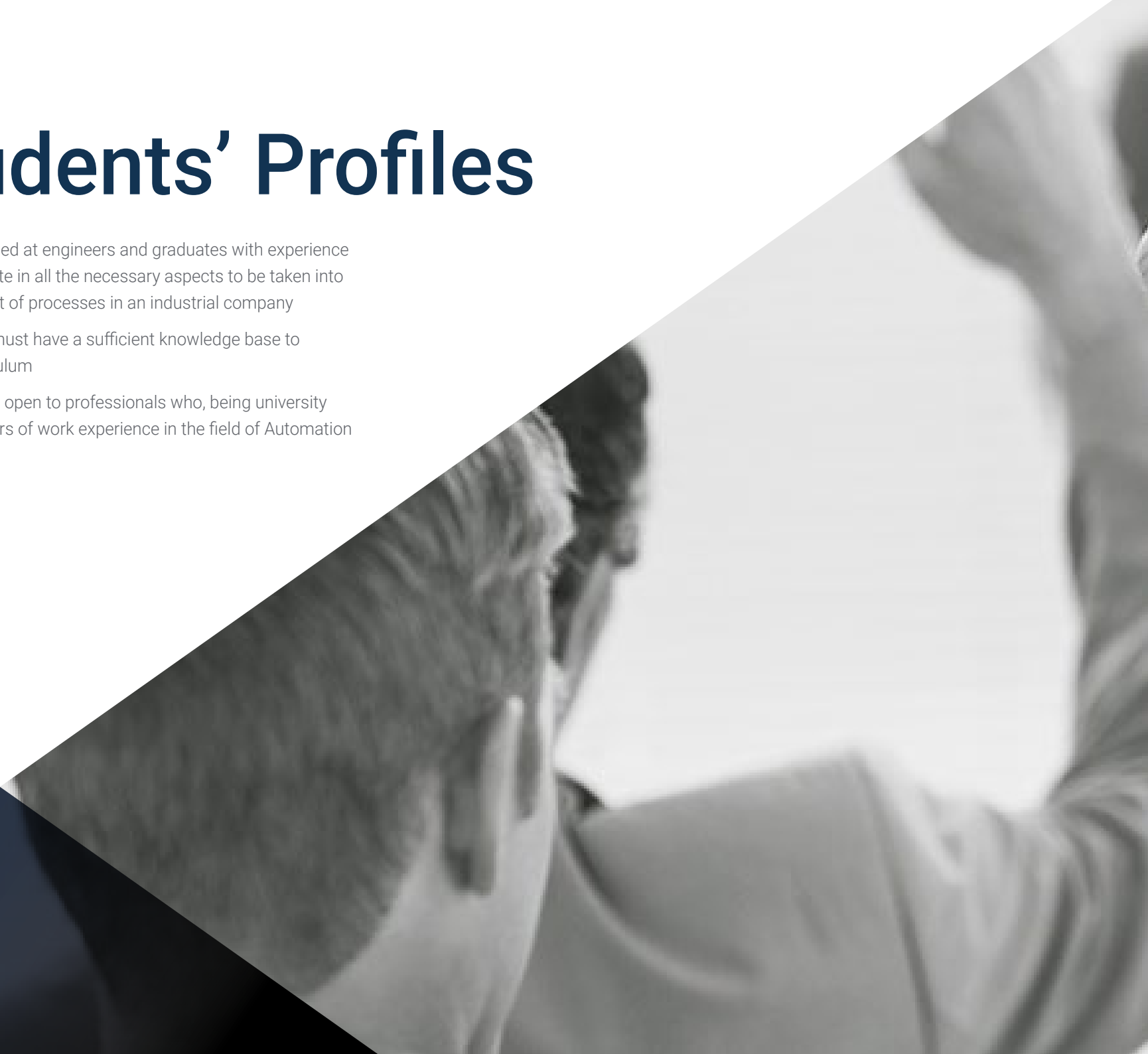
07

# Our Students' Profiles

This Postgraduate Certificate is aimed at engineers and graduates with experience who want to delve deeper and update in all the necessary aspects to be taken into account for the proper management of processes in an industrial company

Students with these qualifications must have a sufficient knowledge base to complete the modules of the curriculum

The Postgraduate Certificate is also open to professionals who, being university graduates in any area, have two years of work experience in the field of Automation and Business Intelligence







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*Study this Postgraduate Certificate  
and become part of the select  
group of TECH alumni"*

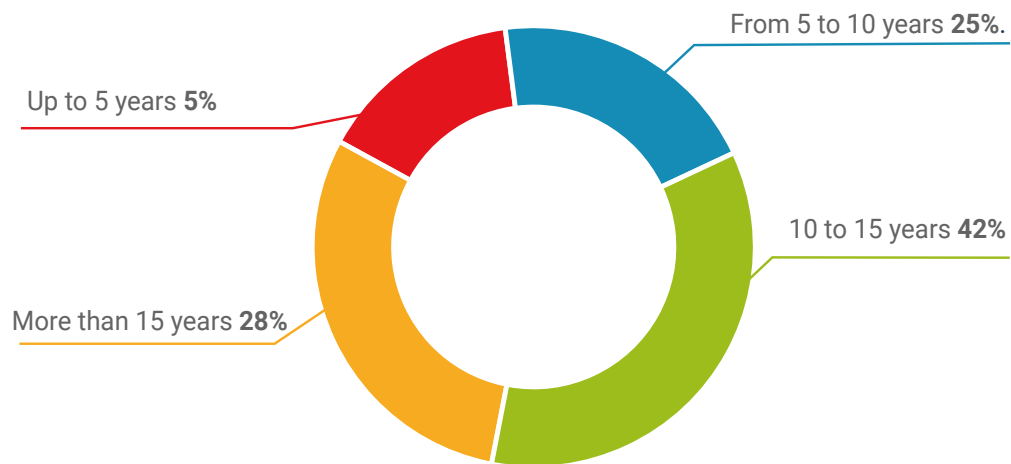
### Average Age

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Between **35** and **45** years old

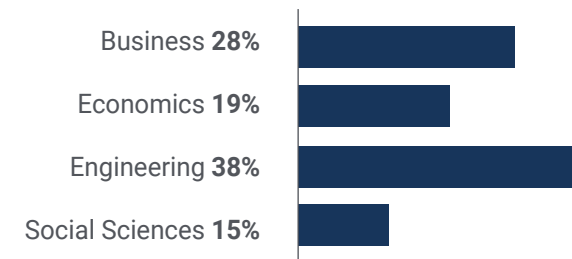
### Years of Experience

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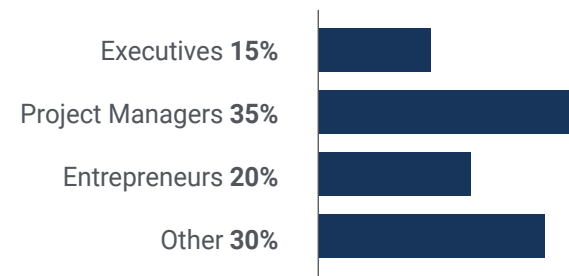
### Training

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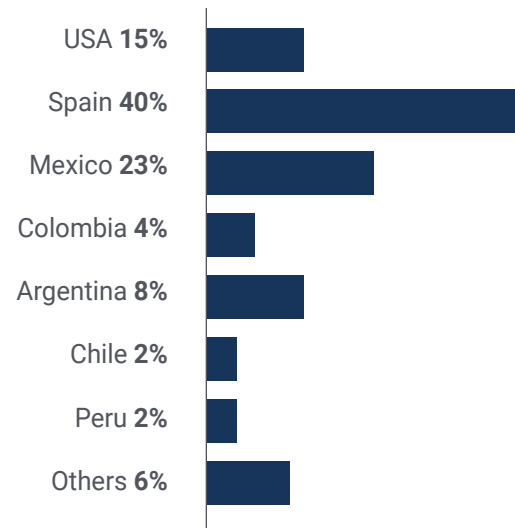
### Academic Profile

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## Geographical Distribution

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## Adriana Sánchez

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*Project manager*

*"I feel that this Postgraduate Certificate has been a great opportunity to update my knowledge and get up to date in my area. This is not the first time I have chosen TECH for my studies, and I would definitely choose this great institution again"*

08

# Course Management

The program includes in its teaching staff reference experts in everything related to industry 4.0 and automation, who pour into this refresher program the experience of their years of work. In addition, other experts of recognized prestige in related areas participate in its design and elaboration, completing the Postgraduate Certificate in an interdisciplinary way, making it, therefore, a unique and highly nourishing experience at an academic level for the student



“

*TECH has the best faculty on the market. By studying with us you will be able to learn with them"*

## Management



### Dr. Asensi, Francisco Andrés

- ◆ PhD in Industrial Engineering in Business Organization from the University of Castilla la Mancha (UCLM).
- ◆ Degree Industrial in Industrial Organization Engineer from the University Polytechnic of Valencia
- ◆ He has worked in several areas, such as Engineering, Quality, Production, Logistics, Information Systems and Human Resources, in companies of several industrial sectors.
- ◆ He has implemented and developed a multitude of management systems for excellence (Quality, Scorecard, *Lean Manufacturing*, Continuous Improvement and Process Improvement) in several industrial companies.
- ◆ Coach of *Strategic Coaching*
- ◆ Author of various business books: "The Adaptive Enterprise", "*Lean Manufacturing: Key Indicators used to efficiently manage Continuous Improvement*", "*Lean Manufacturing: Keys to Material Flow Improvement*."
- ◆ Author of several books on Personal and Professional Development: "Total Leader", "self-coaching".

## Professors

### Mr. Del Olmo, Daniel

- ◆ Founder of Enira *Engineering* S.L. in 2018, with two products recognized as innovative in Industry 4.0 by official bodies (*FactoryBI* y *Smart Extrusion*).
- ◆ Specialization in Industrial Engineering, specializing in Electronics and Automation.
- ◆ Professionally, he has worked mainly in multinational companies in the industrial automation and automotive sector as Plant Engineering Manager.
- ◆ Experience at Toyota *Production System* (TPS) during 4 years at NHK *Springs* Co LTD. Japan, specialization received in Japan
- ◆ Lecturer in the MBA Master in Operations at the European University of Valencia (2018).



09

# Impact on Your Career

TECH is aware that taking a program of these characteristics is a great economic, professional and of course, personal investment. The ultimate goal of this great effort should be to achieve professional growth

And for this, we offer you a unique opportunity with this Postgraduate Certificate, thanks to which you will be able to increase your skills and therefore, improve your daily practice and your chances of career advancement







“

*Our challenge is to generate a positive change in your professional career. We are fully committed to helping you achieve it"*

### Are you ready to take the leap? Excellent professional development awaits

The Postgraduate Certificate in Industry 4.0 and Business Intelligence: Digitized Industrial Companies is an intensive program that will prepare you to face business challenges and decisions in the field of *Industrial Management*.. Its main objective is to promote your personal and professional growth, to and help you achieve success

If you want to improve yourself, make a positive change professionally and network with the best, this is the place for you

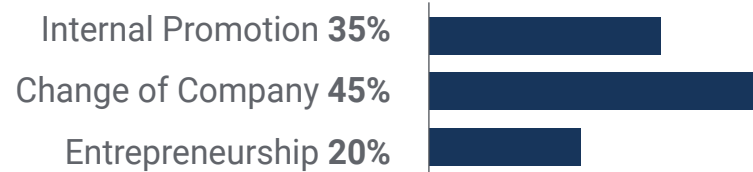
*Achieve a positive change in your career, thanks to the opportunity that TECH offers you with this program.*

*Don't miss the opportunity to specialize with us. You will find the most relevant information on this subject that will allow you to give a boost to your profession.*

### When the change occurs



### Type of change



### Salary increase

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This program represents a salary increase of more than **25%** for our students



10

# Benefits for Your Company

The Postgraduate Certificate in Industry 4.0 and Business Intelligence: Digitized Industrial Companies contributes to raising the organization's talent to its maximum potential through the specialization of high-level leaders

Thus, participating in this specialization is a unique opportunity to access a powerful network of contacts in which to find future professional partners, customers or suppliers





“

*This program will provide you with the keys to bring a new business vision to your company”*

Developing and retaining talent in companies is the best long-term investment.

**01**

### **Intellectual Capital and Talent Growth**

Bring new concepts, strategies and perspectives to the company that can bring about creative changes in the organization.

---

**02**

### **Retaining high-potential executives to avoid talent drain**

This program strengthens the link between the company and the professional and opens new avenues for professional growth within the company.

**03**

### **Building agents of change**

You will be able to make decisions in times of uncertainty and crisis, helping the organization overcome obstacles.

---

**04**

### **Increased international expansion possibilities**

Thanks to this program, the company will come into contact with the main markets in the world economy.



05

### **Project Development**

Be able to work on a real project or develop new projects in the R+D or Business Development area of your company.

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06

### **Increased competitiveness**

This program will equip students with the skills to take on new challenges and drive the organization forward.

# 11 Certificate

The Postgraduate Certificate in Industry 4.0 and Business Intelligence: Digitized Industrial Companies 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"*

The **Postgraduate Certificate in Industry 4.0 and Business Intelligence: Digitized Industrial Companies** 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 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: Digitized Industrial Companies**

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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# Postgraduate Certificate

Industry 4.0 and Business Intelligence:  
Digitized Industrial Companies



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INDUSTRY