# Postgraduate Certificate

## Industry 4.0 Automation Systems


tech technological university

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# Postgraduate Certificate

## Industry 4.0 Automation Systems

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

Website: **www.techtitute.com/pk/engineering/postgraduate-certificate/industry-4-0-automation-systems**

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# Introduction

Within Industry 4.0, one of the fundamental pillars is Automation, which is presented as a very effective solution for reducing costs and improving production. This is why professionals who specialize in this area are increasingly in demand by companies, and why TECH has designed this program. Throughout the content, topics such as Industrial Automation and Robotics are addressed in depth, with the aim of providing students with advanced skills and knowledge with which to face their work in this area, with the highest quality in their work. All this in a comfortable 100% online mode.

*Acquire new knowledge in PLC Systems and Industrial Control, without leaving home and at any time of day"*

Automation Systems are one of the fundamental factors of the Industry 4.0, because they connect, control and monitor device networks, Real-time cloud machines and information. In this way, engineering professionals who are specialized and have in-depth knowledge of this subject are much needed in the current labor market.

This is why TECH has designed a Postgraduate Certificate in Industry 4.0 Automation Systems with which it seeks to provide students with skills and competences to enable them to carry out their work in this field with so much future work, with the maximum efficiency possible. And this, through delving into topics such as Automation, Industrial Connectivity, Lean Manufacturing, PLC Systems or Industrial Control and Robotics.

All this, with the most complete teaching materials, information based on the most up-to-date sources and latest teaching technologies. In addition, under a 100% online modality that allows students to combine their studies with their other day-to-day activities.

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

- The development of case studies presented by experts in Industry 4.0 Automation Systems
- 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

*Give a boost to your career and delve into all areas of Automation 4.0"*

*Delve into topics such as Lean Manufacturing or Data Exploitation, in a 100% online mode"*

*Enjoy thorough videos, or specialized readings, which will allow you to delve into all aspects of Industrial Robotics.*

*Become an expert in Automation Systems in just 6 weeks.*

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

The multimedia content, developed with the latest educational technology, will provide the professional with situated and 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.

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# Objectives

The objective of this program is to equip students with advanced and comprehensive skills and knowledge about Automation Systems Industry 4.0, so that they can face their profession with the best basis and the highest quality in their work. All this, through the most complete theoretical and practical content in the academic market.

*The objective of this degree is for you to become the best professional, so that you stand out in one of the areas with the greatest future of Engineering"*

## General Objectives

- 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 the Digital Change



## Specific Objectives

- Better understanding of the main automation and control systems, their connectivity, the types of industrial communications and the type of data they exchange
- Deepen the understanding of the main automation and control systems, their connectivity, the types of industrial communications and the type of data they exchange
- Be able to deal with large amounts of data, define their analysis and derive value from them
- Define continuous monitoring, predictive and prescriptive maintenance models

*Update your knowledge of Industrial Automation and boost your professional profile in just a few weeks"*

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# Course Management

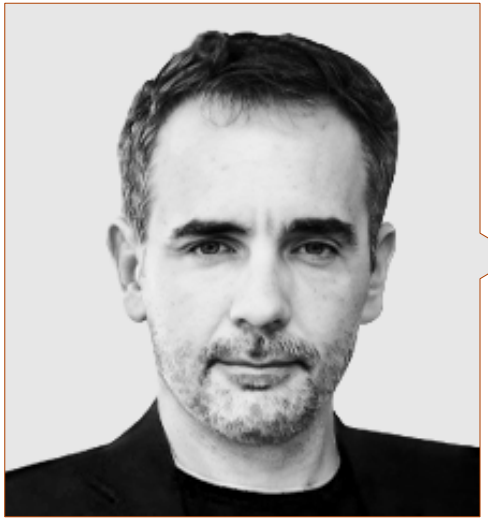
The management and teaching staff of this Postgraduate Certificate in Automation Systems of Industry 4.0 are part of the team of experts in the field from TECH. These professionals have been selected to create the most complete, dynamic and practical content, seeking to achieve student excellence on their path to success.

*TECH has selected an excellent teaching team to give you the most complete and up-to-date knowledge"*

## Management

### Mr. 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 the English Spanish Association of People with High Intellectual Quotient



### Mr. 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

### 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

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# Structure and Content

The structure and content of this program have been designed by outstanding professionals who are experts in the field and who are part of the TECH team. After pouring their most specialized knowledge and extensive experience into each and every one of the materials, they have created a unique curriculum that lives up to the highest expectations. In addition, they have been based on the most efficient pedagogical methodology, *Relearning*.

*Register now and access all the content and a lot of additional material, from wherever you want and 24 hours a day"*

## **Module 1.** Industry 4.0 Automation Systems

1.1. Industrial Automation
- 1.1.1. Automation
- 1.1.2. Architecture and Components
- 1.1.3. Safety

1.2. Industrial Robotics
- 1.2.1. Fundamentals of Industrial Robotics
- 1.2.2. Models and Impact on Industrial Processes

1.3. PLC Systems and Industrial Control
- 1.3.1. PLC Evolution and Status
- 1.3.2. Evolution of Programming Languages
- 1.3.3. Computer Integrated Automation CIM

1.4. Sensors and Actuators
- 1.4.1. Classification of Transducers
- 1.4.2. Types of Sensors
- 1.4.3. Standardization of Signals

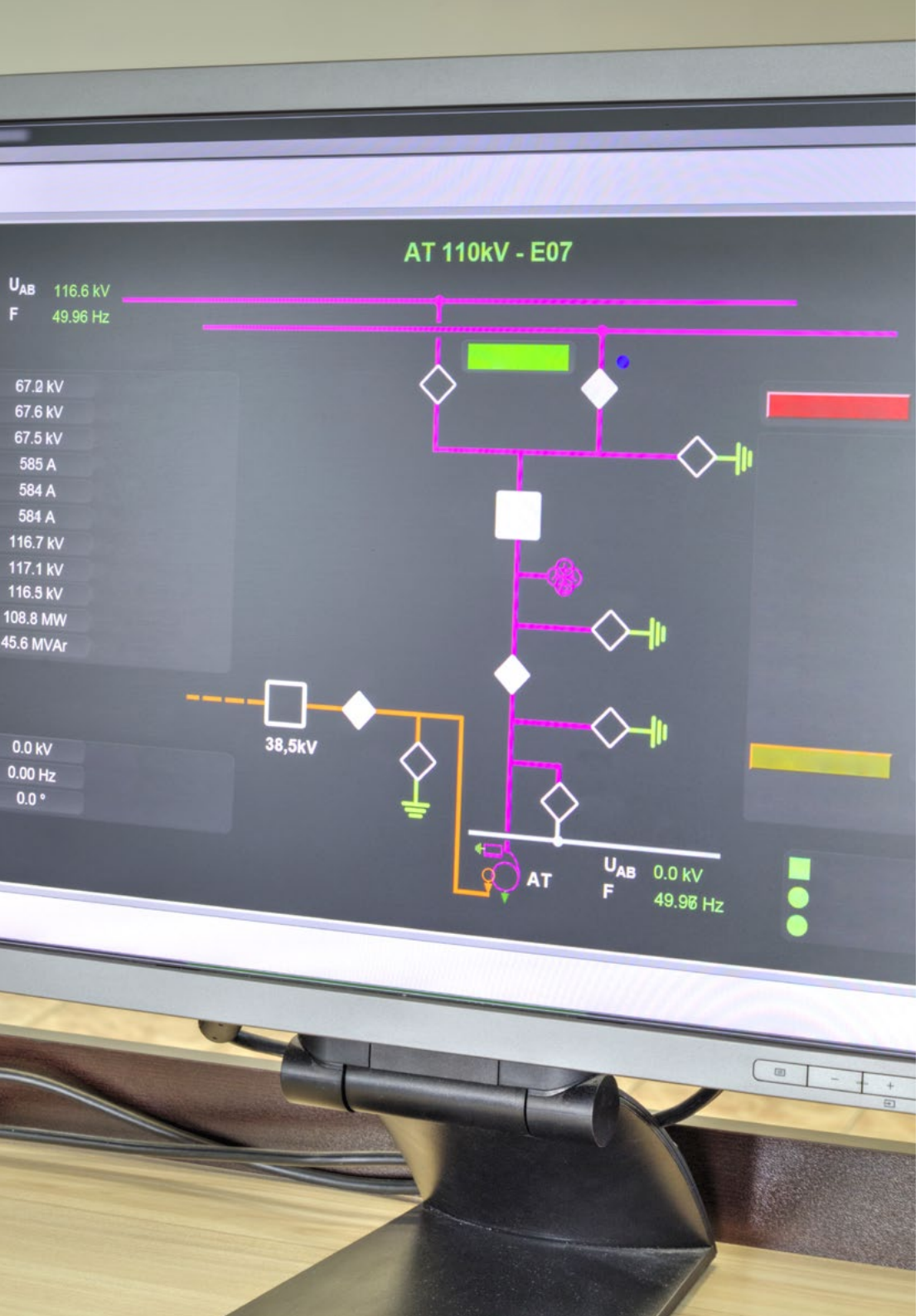
1.5. Monitor and Manage
- 1.5.1. Types of Actuators
- 1.5.2. Feedback Control Systems

1.6. Industrial Connectivity
- 1.6.1. Standardized Fieldbuses
- 1.6.2. Connectivity

1.7. Proactive / Predictive Maintenance
- 1.7.1. Predictive Maintenance
- 1.7.2. Fault Identification and Analysis
- 1.7.3. Proactive Actions Based on Predictive Maintenance

1.8. Continuous Monitoring and Prescriptive Maintenance
- 1.8.1. Prescriptive Maintenance Concept in Industrial Environments
- 1.8.2. Selection and Exploitation of Data for Self-Diagnostics

1.9. Lean Manufacturing
- 1.9.1. Lean Manufacturing
- 1.9.2. Benefits of Lean Implementation in Industrial Processes




1.10. Industrialized Processes in Industry 4.0. Use Case
- 1.10.1. Project definition
- 1.10.2. Technological Selection
- 1.10.3. Connectivity
- 1.10.4. Data Exploitation

*Thanks to TECH's relearning, you can assimilate the essential concepts in a fast, natural and precise way"*

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# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## Case Study to contextualize all content

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

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


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

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

## A learning method that is different and innovative

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

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

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

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

## Relearning Methodology

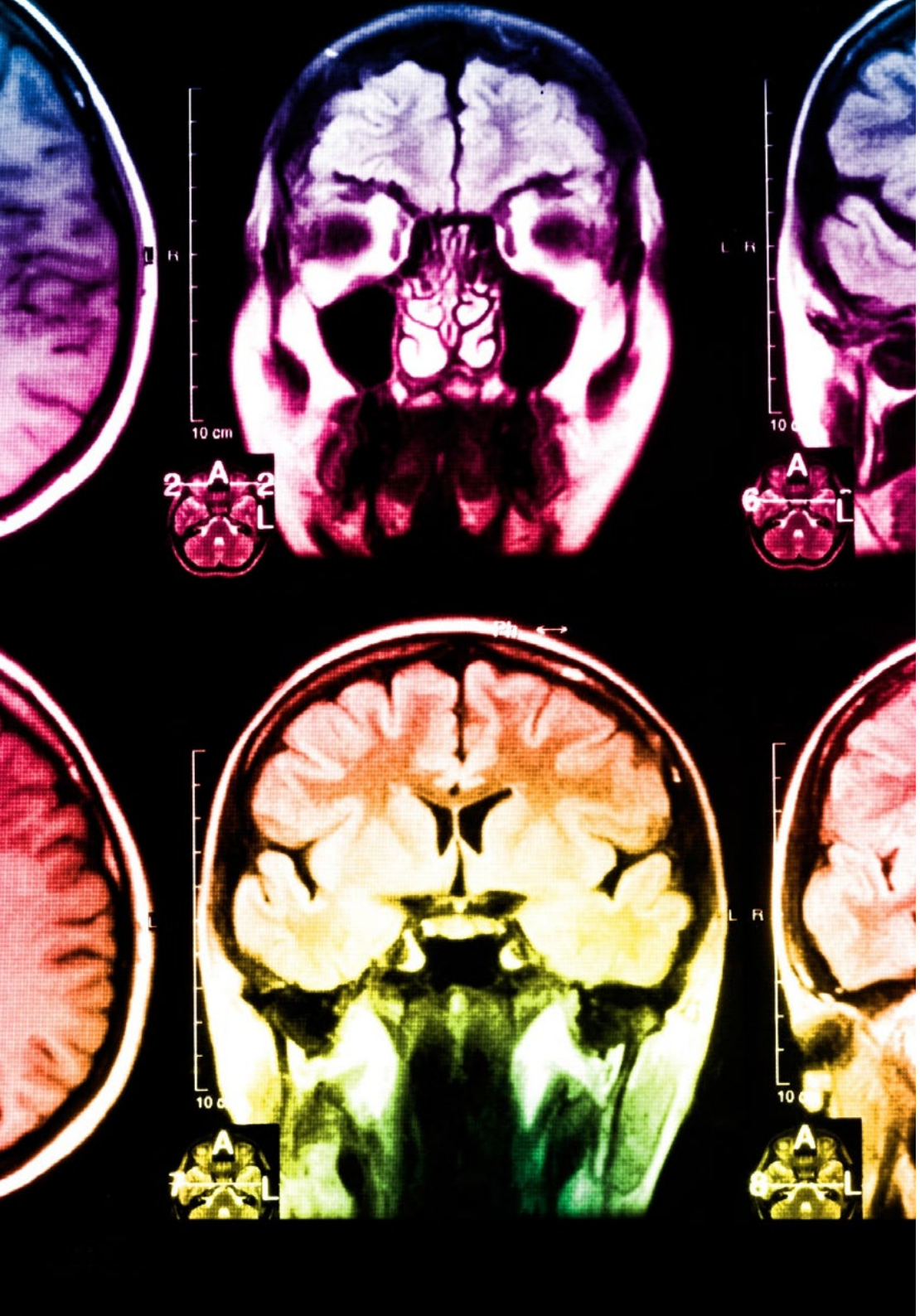
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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

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

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

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



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

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

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

**This program offers the best educational material, prepared with professionals in mind:**

### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

### Classes

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

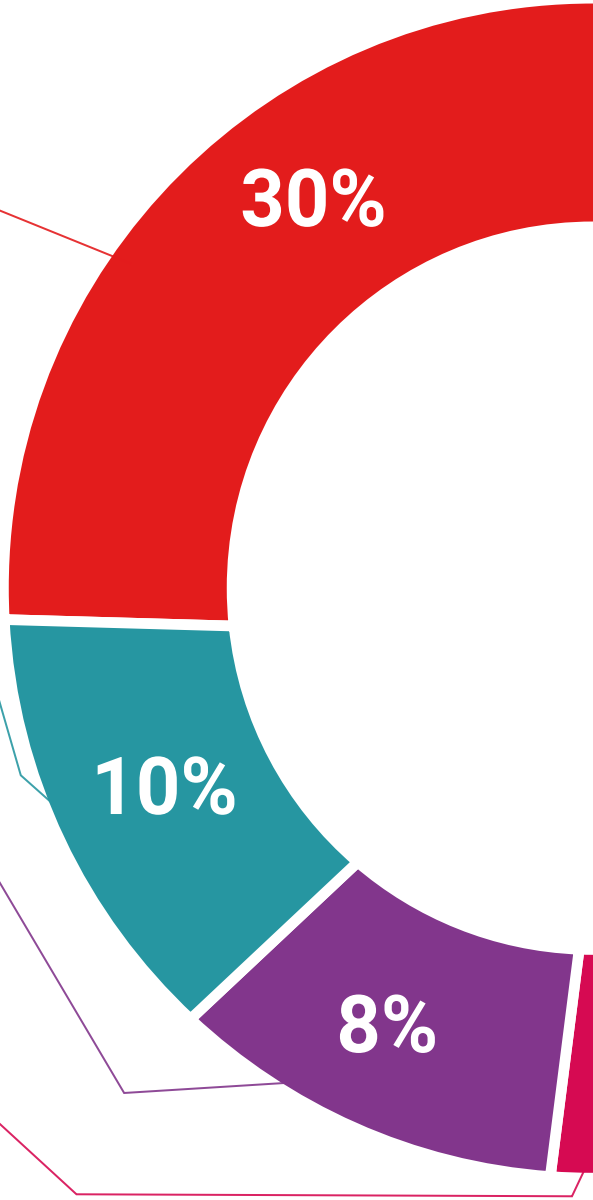
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

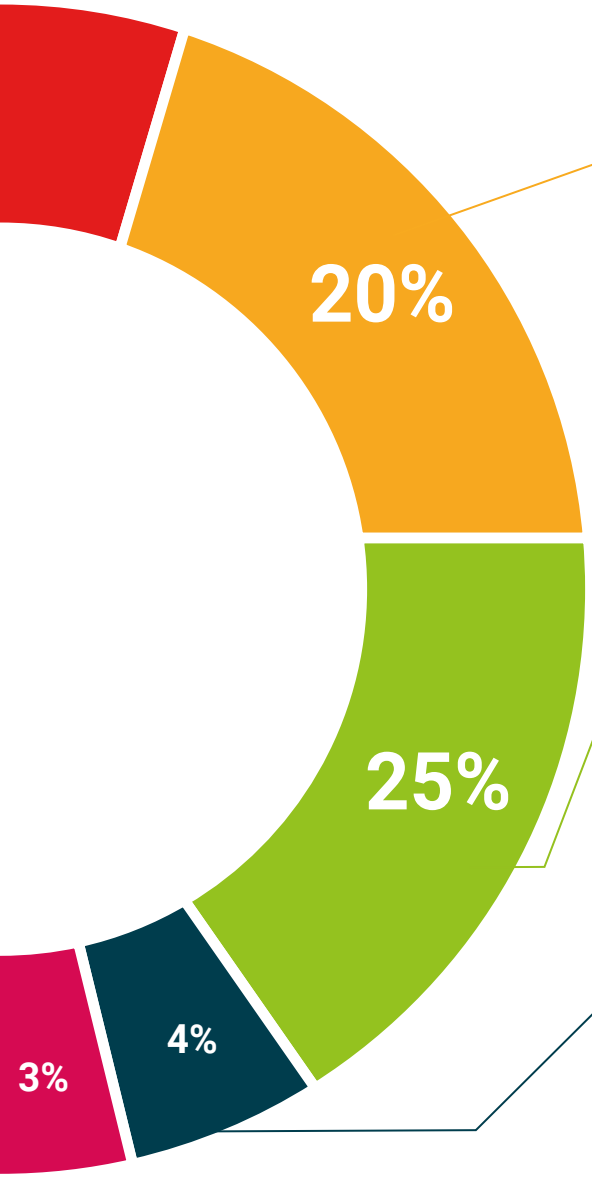
### Practising Skills and Abilities

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

### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.






### Case Studies

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

### Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

### Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

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# Certificate

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

*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 Automation Systems** 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 Automation Systems**

Official Nº of Hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Industry 4.0 Automation Systems

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

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

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