Postgraduate Diploma

Industrial Internet of Things (IIoT)

tech global university

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Postgraduate Diploma

Industrial Internet of Things (IIoT)

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Credits: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-industrial-internet-things-iiot

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01

Introduction

As various reports indicate, the IIoT can directly impact industries that account for 62% of GDP in G20 countries. In this way, its application in areas such as manufacturing, energy, and food will promote productivity and innovation over the next decade. These benefits and their progressive implementation in the economic activity make it clear that specializing in this field is a professional bet for the future for computer scientists, which is why TECH has designed this program. Through it, the student will manage the applications of Lean Manufacturing within the company or delve into the use of automation systems in Industry 4.0, in an online way and from their own home.

This program will allow you to detect the main keys in the digitization process of manufacturing in a first level company"

The Industrial Internet of Things is the network of sensors, digital applications and autonomous devices that enables the exchange of information between the technologies themselves through the use of the Internet. In this line, its use is highly beneficial for companies, since it allows them to obtain rigorous data to establish their analysis and optimize business production, in this way reducing the costs of manufacturing goods or providing certain services. For this reason, computer scientists specialized in working with this technology are increasingly in demand by leading international companies.

Faced with this situation, TECH has promoted the creation of this program, which will enable the student to delve into the intricacies of the Industrial Internet of Things, in order to boost its growth in a booming sector. During 6 months of intensive learning, you will delve into the protocols for implementing Lean Manufacturing in industrial processes or evaluate the main features and phases of manufacturing digitalization. In addition, the student will analyze the architectural keys behind a Smart Factory.

Because this program is developed through a completely online methodology, the students will develop their own schedules to access a first-class program. Likewise, this Postgraduate Diploma is designed and taught by leading specialists in the area of IIoT and technological solutions for companies, so the knowledge that the computer scientist will assimilate will preserve a full professional applicability.

This **Postgraduate Diploma in Industrial Internet of Things (IIoT)** 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 technological solutions
- The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

The Postgraduate Diploma in Industrial Internet of Things (IIoT) will enable you to identify opportunities for implementing Lean Manufacturing in industrial processes"

Enjoy a pleasant and effective learning experience through the teaching formats offered by this program, such as the explanatory video or the interactive summary"

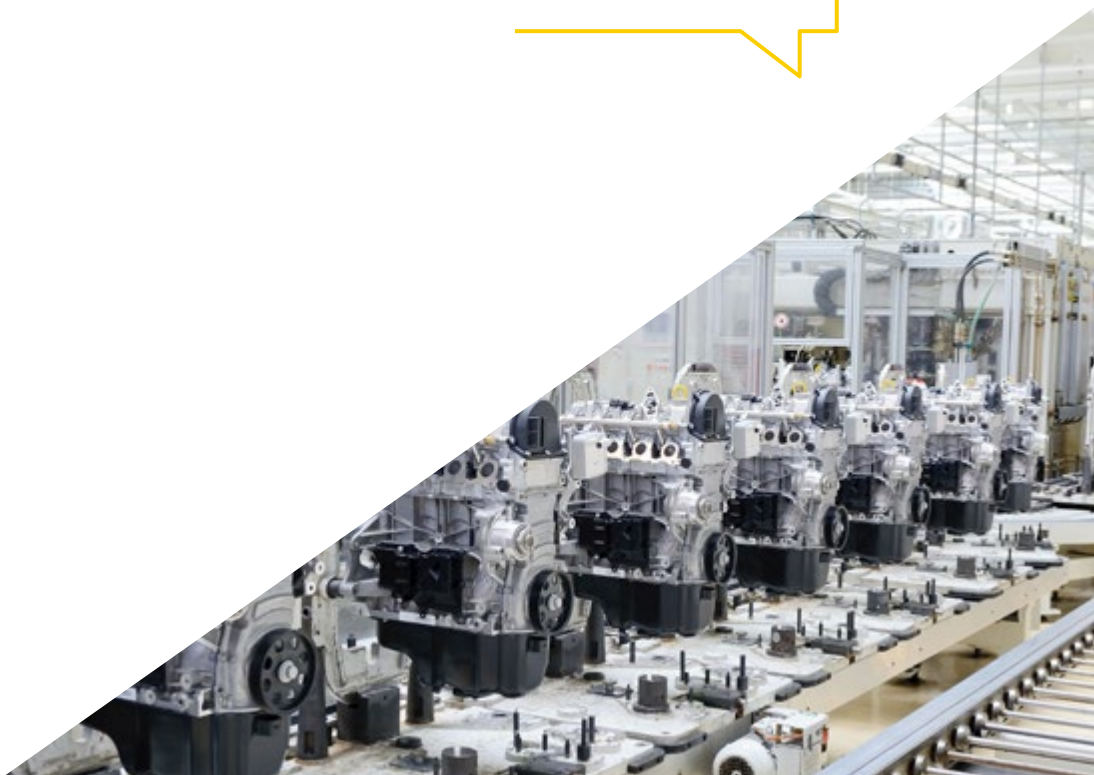
The characteristic Relearning system of this Postgraduate Diploma will allow you to learn at your own pace without depending on external teaching conditions.

Throughout this educational period, you will handle the protocols required to implement IIoT in different branches of business activity.

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.

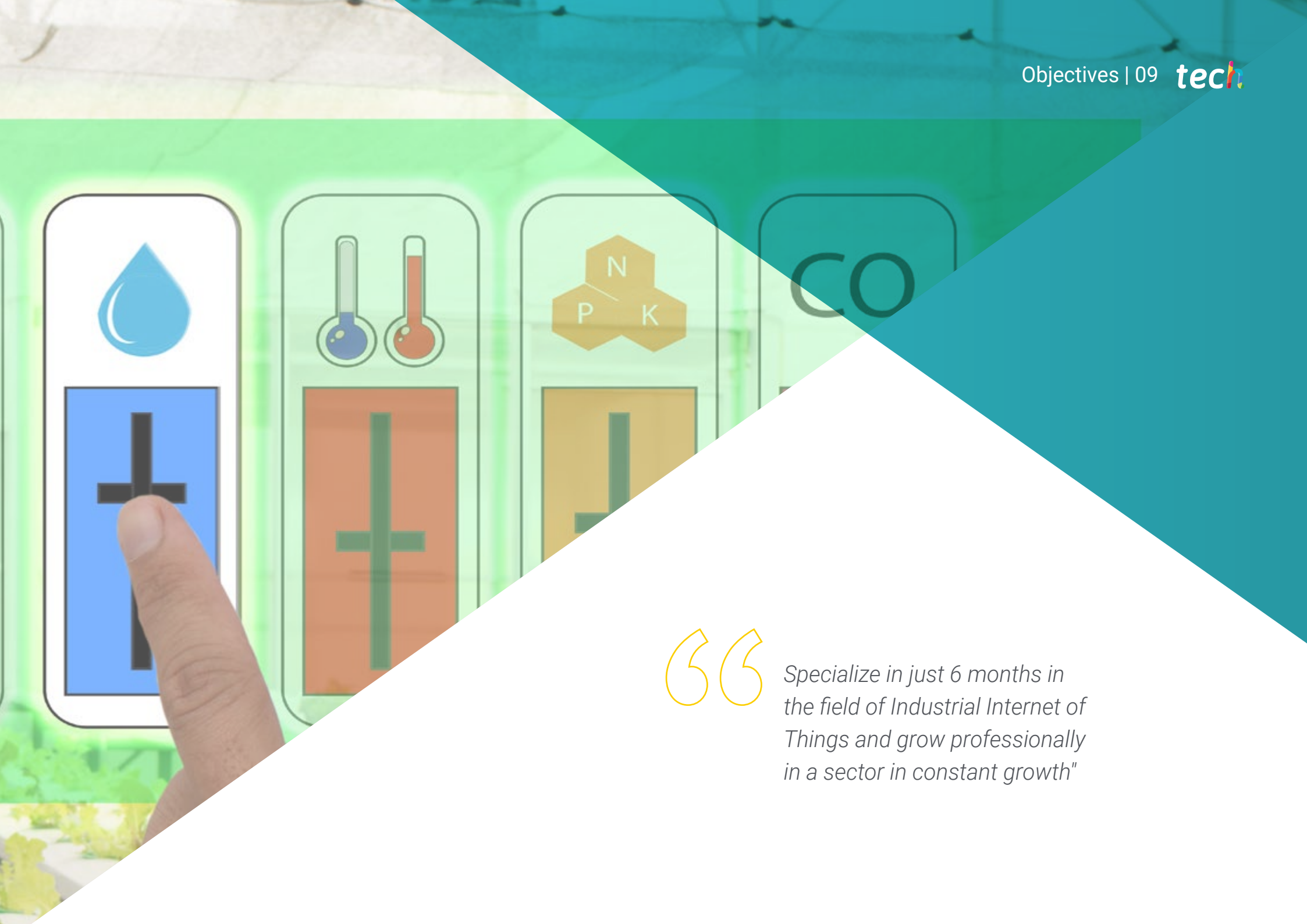
This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the educational year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced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



02

Objectives

This Postgraduate Diploma has been designed with the intention of providing the student with a relevant increase in their knowledge regarding the Industrial Internet of Things. Throughout this educational journey, you will be able to detect the impact of robotics on business production or delve into the role of AI in the development of corporate activity. All of this, while ensuring the achievement of a series of general and specific objectives that TECH has outlined for this program.



Specialize in just 6 months in the field of Industrial Internet of Things and grow professionally in a sector in constant growth"

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 Digital Change

Take this Postgraduate Diploma and be at the forefront of the Industrial Internet of Things field, learning from your own home and managing your time as you wish"

Specific Objectives

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 and challenges that come with it

Module 2. Industry 4.0 Automation Systems

- 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 3. Internet of Things

- Have detailed knowledge of the functioning of IoT and Industry 4.0 and its combinations with other technologies, its current situation, its main devices and uses and how hyperconnectivity gives rise to new business models where all products and systems are connected and in permanent communication
- Deepen the knowledge of an IoT platform and the elements that compose it, the challenges and opportunities to implement IoT platforms in factories and companies, the main business areas related to IoT platforms and the relationship between IoT platforms, robotics and other emerging technologies
- Know the main existing wearable devices, their usefulness, the security systems to be applied in any IoT model and its variant in the industrial world, called IIoT

03

Course Management

Thanks to TECH's tireless commitment to raising the level of its programs to the highest level, the teachers in this program are top IIoT and technology solutions professionals who are actively working in the field. These specialists are in charge of creating the teaching materials that the computer scientist will benefit from during this Postgraduate Diploma. For this reason, the contents you will receive will be constantly and fully up-to-date.

In order to provide you with a first class education, this Postgraduate Diploma is taught by professionals with extensive experience in the field of the Industrial Internet of Things"

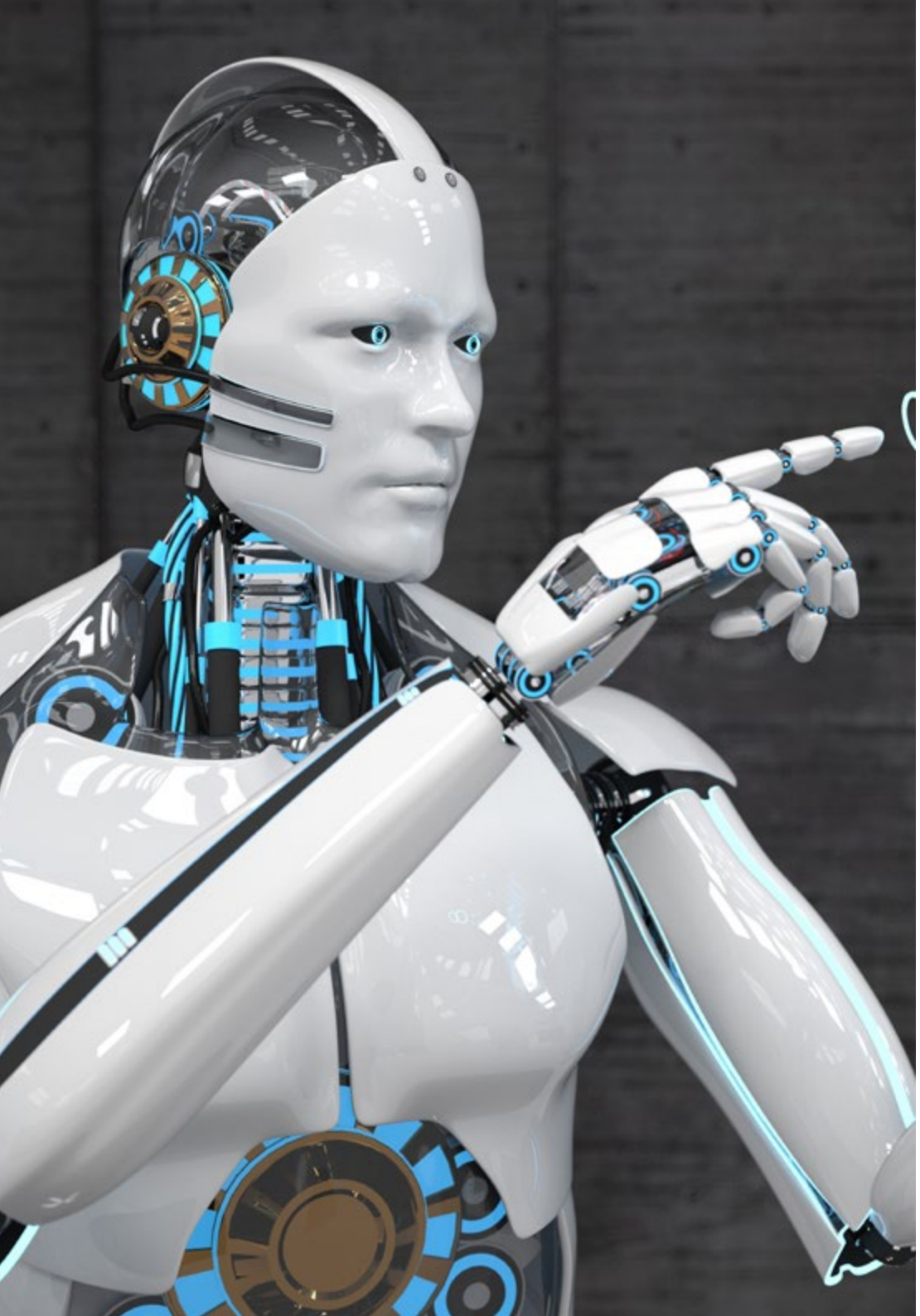
Management

Mr. Segovia Escobar, Pablo

- Chief Executive of the Defense Sector in the Company Tecnobit of the Oesía Group
- Project Manager at Indra
- Master's Degree in Business Administration and Management from the National University of Distance Education
- Postgraduate in Strategic Management Function
- Member of: Spanish Association of People with High Intellectual Quotient

Mr. Diezma López, Pedrto

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



Professors

Mr. Castellano Nieto, Francisco

- Head of the Maintenance Area of Indra Company
- Consultant Collaborator for Siemens AG, Allen-Bradley at Rockwell Automation and other companies
- Industrial Electronic Engineer from Comillas Pontifical University

Mr. Cámara Madrid, José Antonio

- Automotive Engineer at Mindcaps
- Quality Manager in the Defense and Security Sector of Indra Company
- Electronic Engineer for Metro de Madrid Works
- Master's Degree in Industrial Technologies from the University of Nebrija

Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

04

Structure and Content

The plan of study of this program is made up of 3 modules through which the computer scientist will significantly increase his knowledge of the Industrial Internet of Things. All the teaching resources you will have at your disposal throughout this program are available in a wide range of textual and multimedia formats. With this, and with its 100% online methodology, TECH's objective is to provide the student with a 24-hour learning process that can be carried out 24 hours a day.

The 100% online methodology of this program will enable you to learn the keys to IIoT without having to leave your home"

Module 1. 4.0 Industry

1.1. Definition of 4.0 Industry
  1.1.1. Features
1.2. Benefits of the 4.0 Industry
  1.2.1. Key Factors
  1.2.2. Main Advantages
1.3. Industrial Revolutions and Vision of the Future
  1.3.1. Industrial Revolutions
  1.3.2. Keys Factors in Each Revolution
  1.3.3. Technological Principles as a Basis for Possible New Revolutions
1.4. The Digital Transformation of the Industry
  1.4.1. Characteristics of the Digitization of the Industry
  1.4.2. Disruptive Technologies
  1.4.3. Applications in the Industry
1.5. Forth Industrial Revolution Key Principles of Industry 4.0
  1.5.1. Definitions
  1.5.2. Key Principles and Applications
1.6. 4.0 Industry and Industrial Internet
  1.6.1. Origin of IoT
  1.6.2. Operation
  1.6.3. Steps to Follow for its Implementation
  1.6.4. Benefits
1.7. Smart Factory Principles
  1.7.1. Smart Factory
  1.7.2. Elements That Defiine 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. DAFO 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. Industry 4.0 Automation Systems

2.1. Industrial Automation
  2.1.1. Automization
  2.1.2. Architecture and Components
  2.1.3. *Safety*
2.2. Industrial Robotics
  2.2.1. Fundamentals of Industrial Robotics
  2.2.2. Models and Impact on Industrial Processes
2.3. PLC Systems and Industrial Control
  2.3.1. PLC Evolution and Status
  2.3.2. Evolution of Programming Languages
  2.3.3. Computer Integrated Automation CIM
2.4. Sensors and Actuators
  2.4.1. Classification of Transducers
  2.4.2. Types of Sensors
  2.4.3. Standardization of Signals
2.5. Monitor and Manage
  2.5.1. Types of Actuators
  2.5.2. Feedback Control Systems
2.6. Industrial Connectivity
  2.6.1. Standardized Fieldbuses
  2.6.2. Connectivity
2.7. Proactive/Predictive Maintenance
  2.7.1. Predictive Maintenance
  2.7.2. Fault Identification and Analysis
  2.7.3. Proactive Actions Based on Predictive Maintenance
2.8. Continuous Monitoring and Prescriptive Maintenance
  2.8.1. Prescriptive Maintenance Concept in Industrial Environments
  2.8.2. Selection and Exploitation of Data for Self-Diagnostics
2.9. *Lean Manufacturing*
  2.9.1. *Lean Manufacturing*
  2.9.2. Benefits Lean Implementation in Industrial Processes
2.10. Industrialized Processes in Industry 4.0. Use Case
  2.10.1. Project definition
  2.10.2. Technological Selection
  2.10.3. Connectivity
  2.10.4. Data Exploitation

Module 3. Internet of Things (IoT)

3.1. Cyber-Physical Systems (CPS) in the Industry 4.0 Vision
- 3.1.1. Internet of Things (IoT)
- 3.1.2. Components Involved in IoT
- 3.1.3. Cases and Applications of IoT

3.2. Internet of Things and Cyber-Physical Systems
- 3.2.1. Computing and Communication Capabilities to Physical Objects
- 3.2.2. Sensors, Data and Elements in Cyber-Physical Systems

3.3. Device Ecosystem
- 3.3.1. Typologies, Examples and Uses
- 3.3.2. Applications of the Different Devices

3.4. IoT Platforms and their Architecture
- 3.4.1. IoT Market Typologies and Platforms
- 3.4.2. Operation of an IoT Platform

3.5. Digital Twins
- 3.5.1. Digital Twins
- 3.5.2. Uses and Applications the Digital Twin

3.6. Indoor & outdoor Geolocation (Real Time Geospatial)
- 3.6.1. Indoor and Outdoor Geolocation Platforms
- 3.6.2. Implications and Challenges of Geolocation in an IoT Project

3.7. Security Intelligence Systems
- 3.7.1. Typologies and Platforms for Security Systems Implementation
- 3.7.2. Components and Architectures in Intelligent Safety Systems

3.8. IoT and IIoT Platform Security
- 3.8.1. Security Components in an IoT System
- 3.8.2. IoT Security Implementation Strategies

3.9. Wearables at Work
- 3.9.1. Types of Wearables in Industrial Environments
- 3.9.2. Lessons Learned and Challenges in Implementing Wearables in the Workplace

3.10. Implementing an API to Interact with a Platform
- 3.10.1. Types of APIs Involved in an IoT Platform
- 3.10.2. API Market
- 3.10.3. Strategies and Systems to Implement API Integrations

Obtain learning based on your educational needs, optimizing your teaching by means of teaching formats present in different multimedia and textual supports"

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.

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

Case Study to contextualize all content

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

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

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

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

A learning method that is different and innovative

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

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

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

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

Relearning Methodology

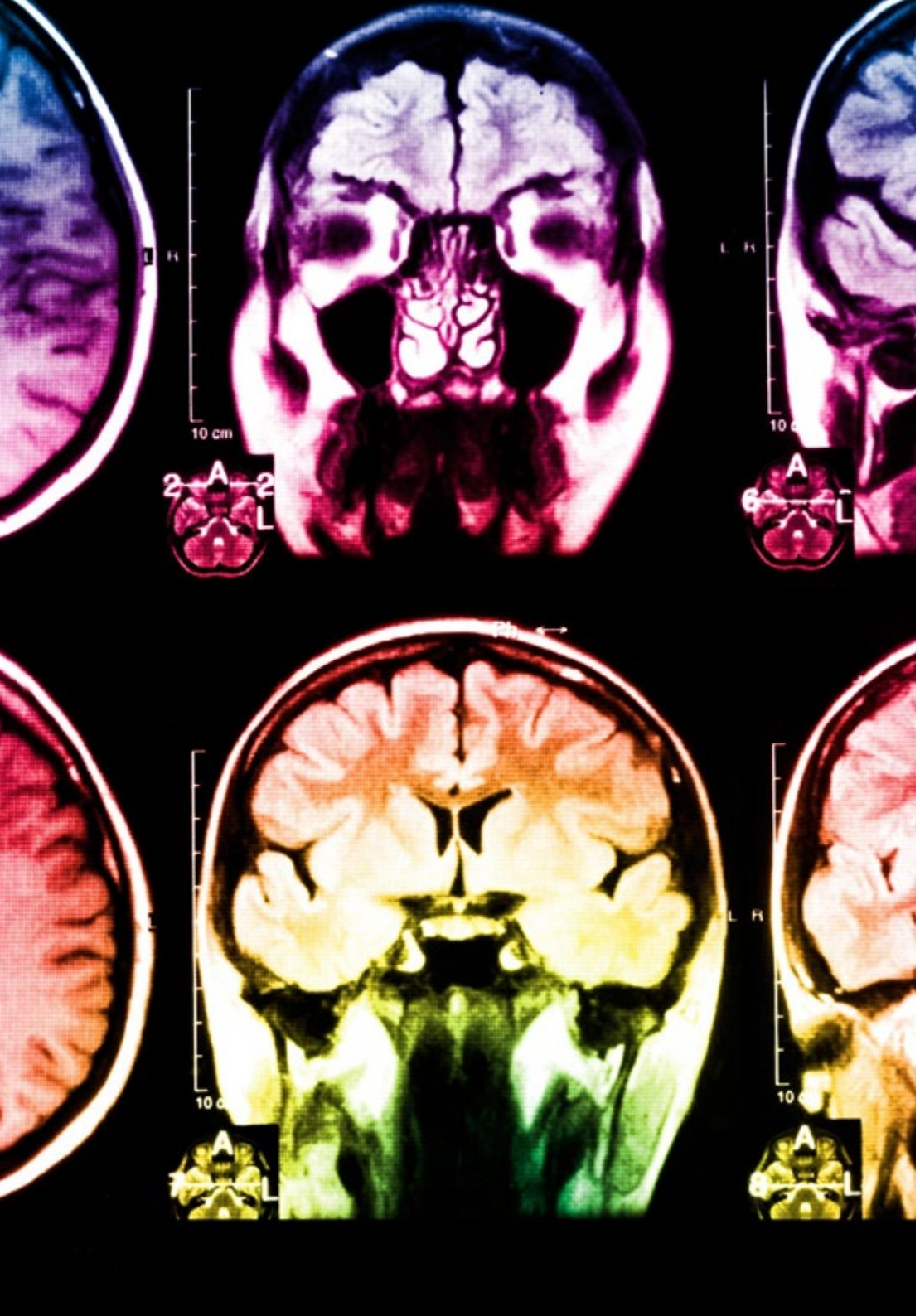
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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

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

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

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



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

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

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

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

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

Study Material

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

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

Classes

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

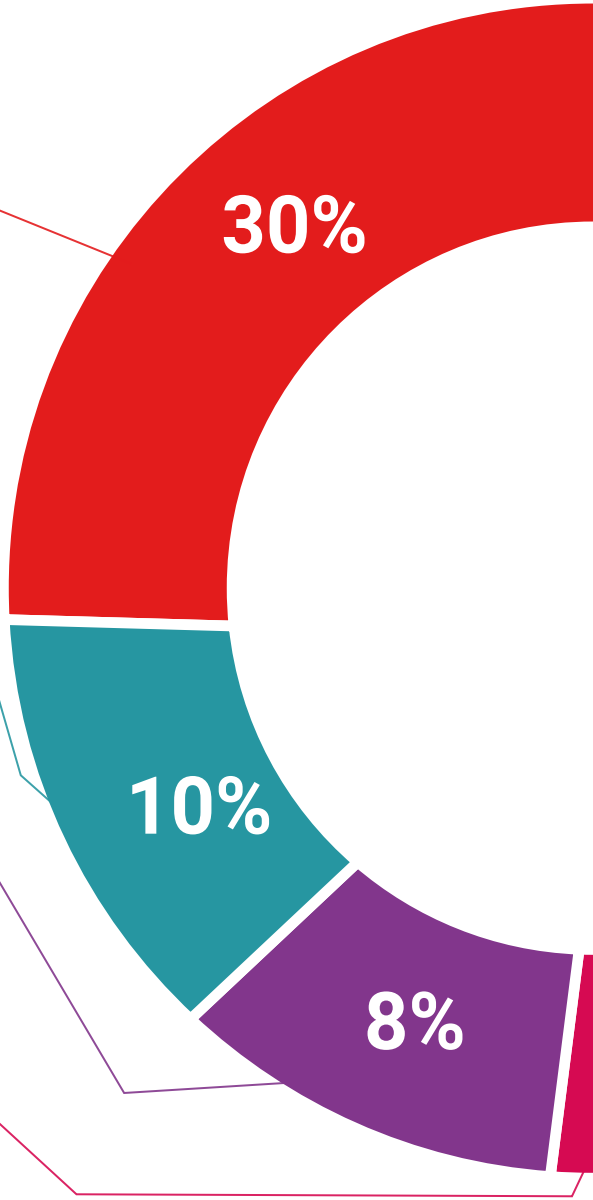
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

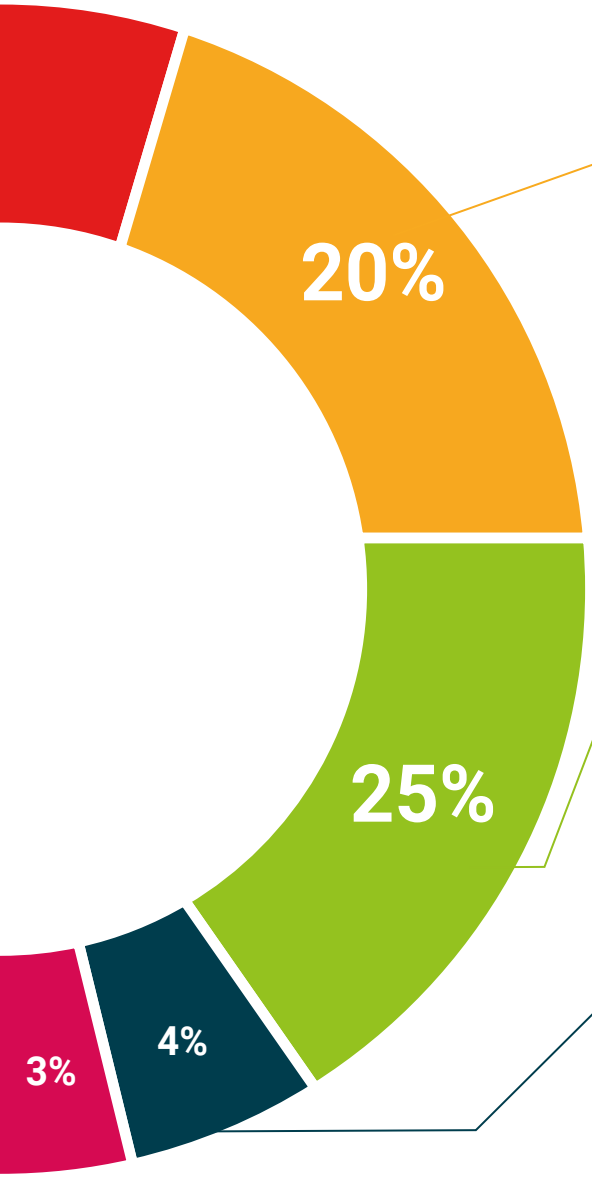
Practising Skills and Abilities

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

Additional Reading

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





Case Studies

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

Interactive Summaries

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

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

Testing & Retesting

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

06

Certificate

The Postgraduate Diploma in Industrial Internet of Things (IIoT) guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.

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

This program will allow you to obtain your **Postgraduate Diploma in Industrial Internet of Things (IIoT)** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Industrial Internet of Things (IIoT)**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Industrial Internet of Things (IIoT)

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

Unique TECH Code: AFWORD23S techtitute.com/certificates

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

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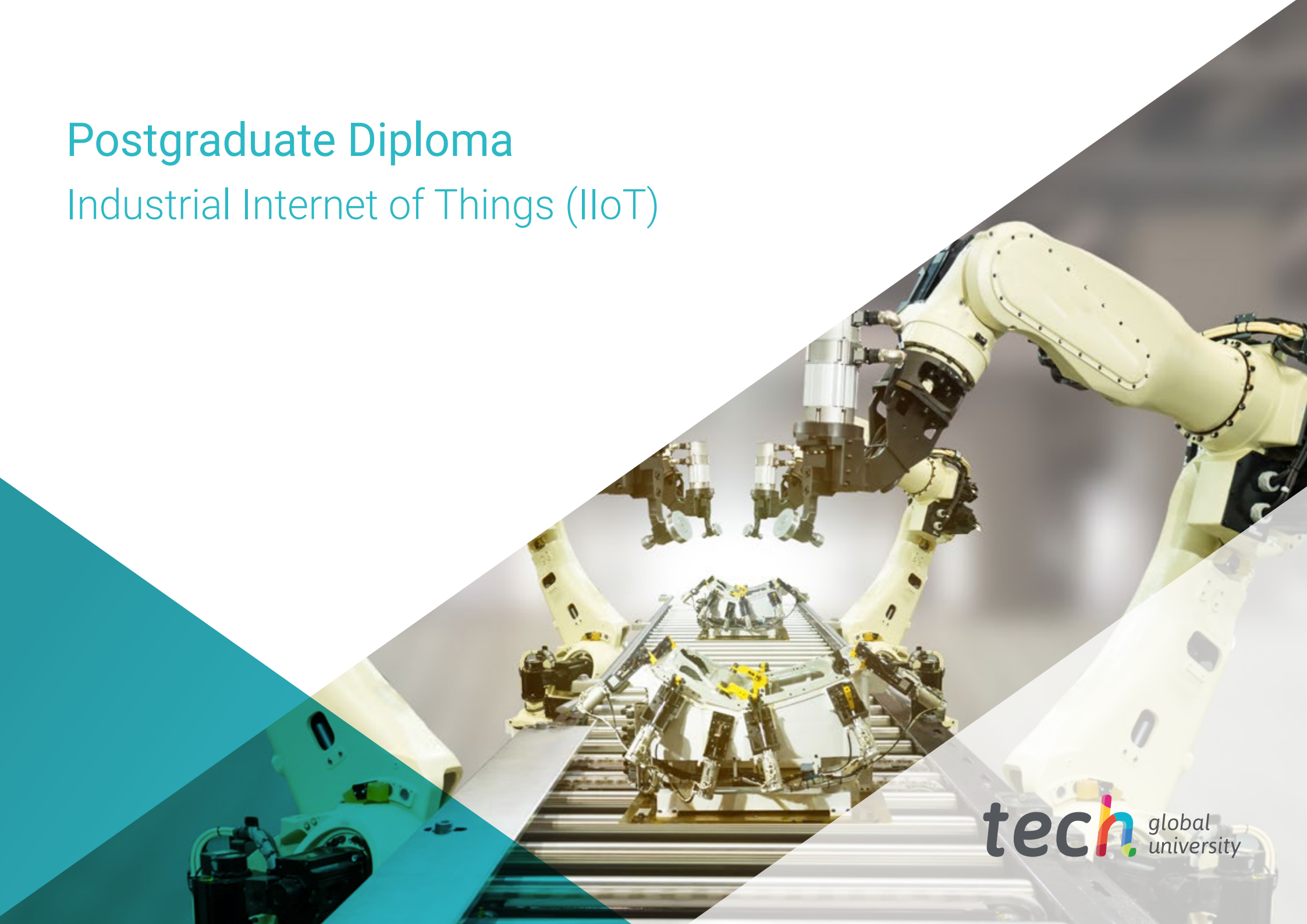

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