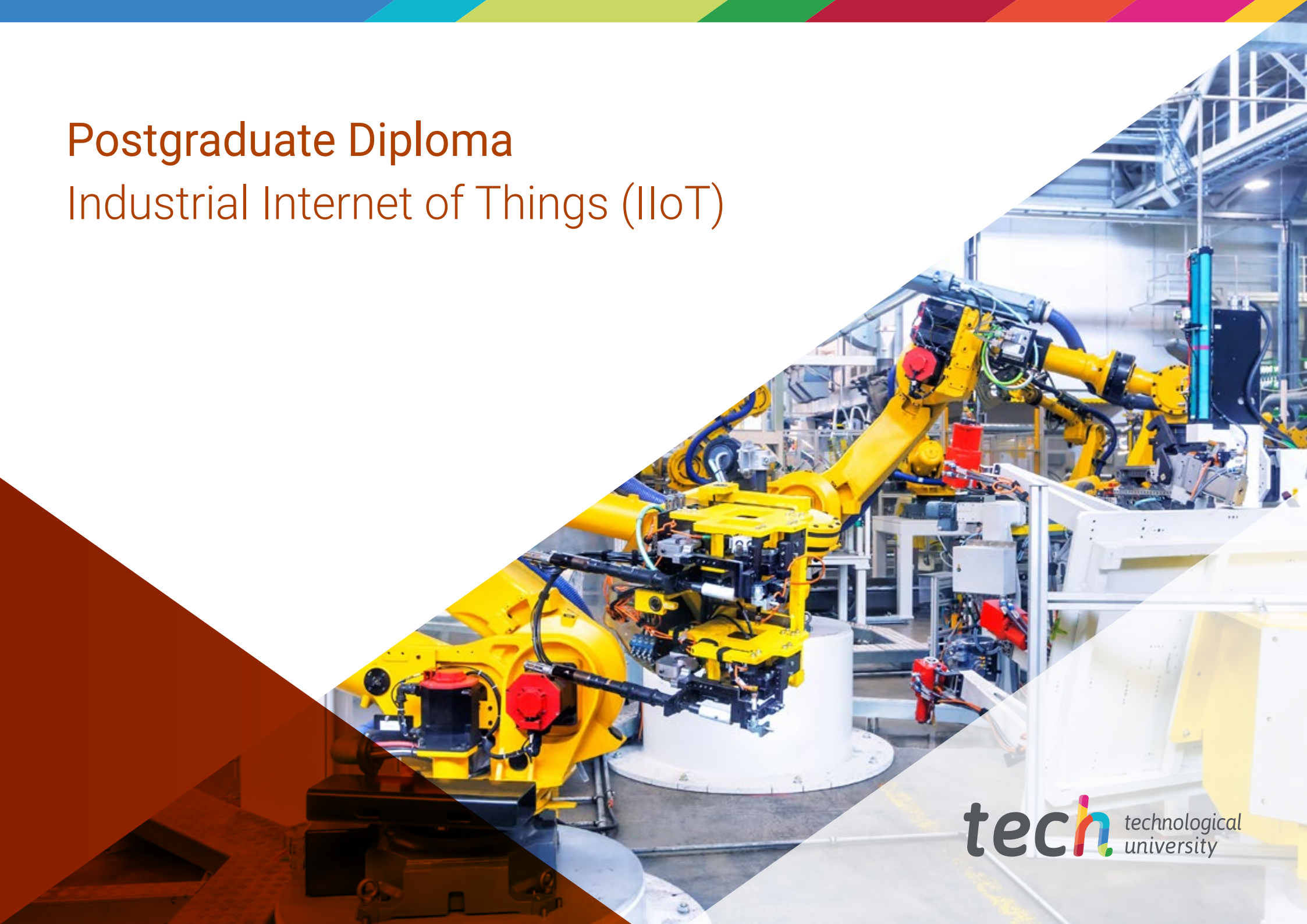
Postgraduate Diploma

Industrial Internet of Things (IIoT)



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Postgraduate Diploma
Industrial Internet of Things (IIoT)

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

Website: **www.techtitute.com/pk/engineering/postgraduate-diploma/postgraduate-diploma-industrial-internet-things-iiot**

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01

Introduction

In the Fourth Industrial Revolution, tools such as the Industrial Internet of Things (IIoT) are of vital importance. Its utility is based on the connection of machinery and the exchange of data between systems, through the internet. The growing demand for professionals specialized in this area is the reason why TECH has developed a program that seeks to enhance the skills of students in these new technologies, so that they can excel in a sector that isbooming. In this way, the content delves into topics such as Industry 4.0, Smart Factory or Automation Systems. All this in a comfortable 100% online mode.

Boost your professional profile with new knowledge and skills in Industrial Robotics and Cyberphysical Systems"

Society is undergoing a new process of change, considered to be the Fourth Industrial Revolution, in which the digitization and Automation of processes and tools are the protagonists. The Industrial Internet of Things (IIoT) consists of a network of physical objects ("things") that incorporate sensors, software and other technologies in order to connect and exchange data with other devices and systems, through the internet. Their usefulness and growing demand is such that professionals with advanced knowledge in this field are increasingly needed.

For this reason, TECH has designed a Postgraduate Diploma in Industrial Internet of Things (IIoT) with which it seeks to provide students with new skills and better competences in this area, with which to ensure a successful future in this area of engineering with such potential. Therefore, the content addresses topics such as Cyberphysical Systems, Security in IoT and IIoT Platforms, Industrial Robotics and the Smart Factory Principles.

All this, in a comfortable 100% online mode that allows students to carry out their studies without being affected by their other day-to-day work, having total freedom of organization. In addition, it offers the most up-to-date, dynamic and comprehensive theoretical and practical contents of the labor market.

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 practical cases presented by experts in Industrial Internet of Things
- 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 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

Get precise and complete knowledge about the Smart Factory, through video reports, videos in detail or specialized readings"

This 100% online Postgraduate Diploma will allow you to balance your IIoT studies with your work. You choose where and when to access"

Become an IIoT expert in just a few months and in a 100% online mode.

Acquire new competencies in industrial automation and PLC systems.

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

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

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

02

Objectives

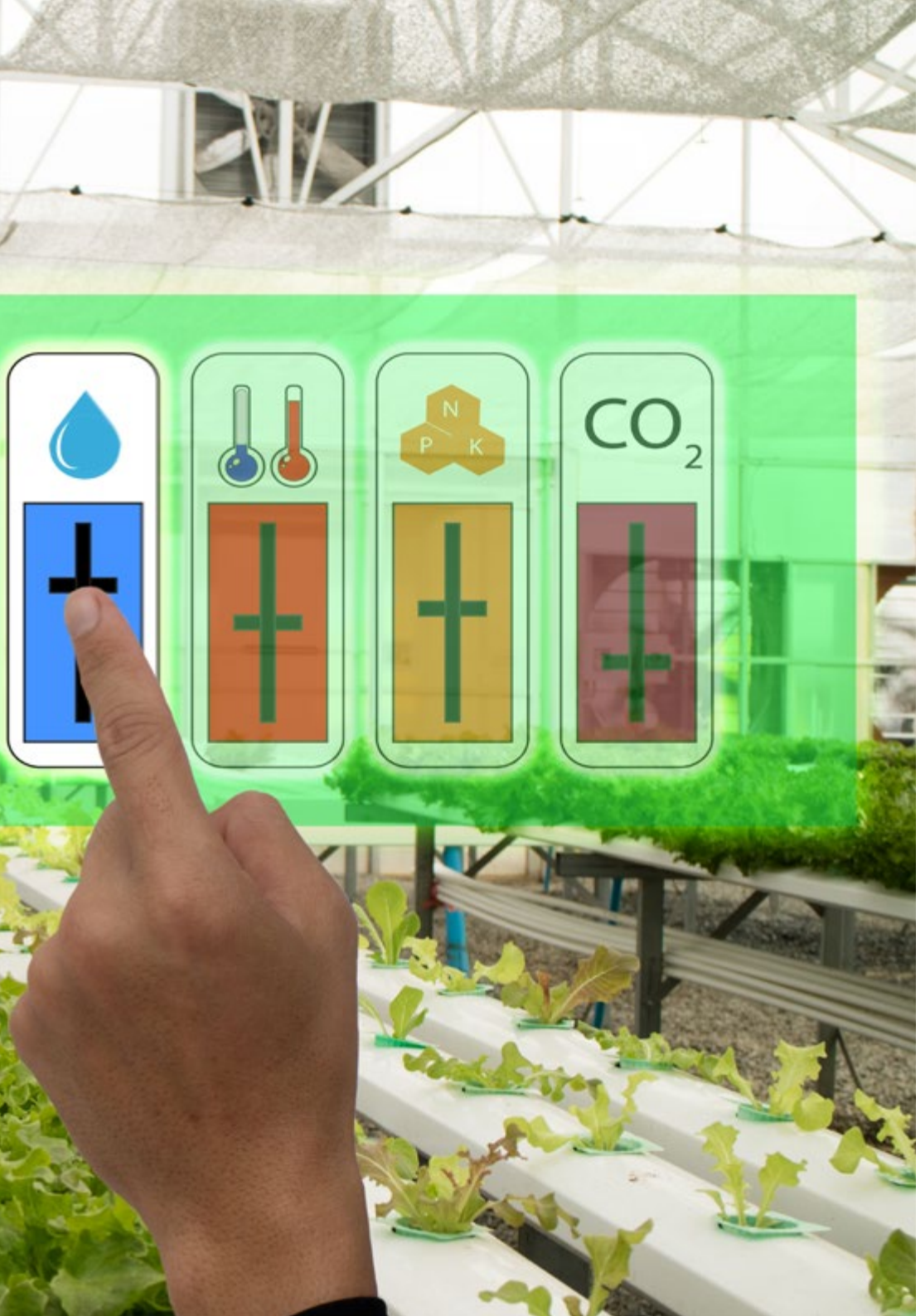
The objective of this Postgraduate Diploma in Industrial Internet of Things (IIoT) is to provide students with specialized knowledge in Industry 4.0, Industrial Robotics, Lean Manufacturing or Intelligent Security Systems, so that they can face their professional future as engineers in this area, with total guarantee of success. All this, through the most complete and dynamic content in the academic market.

This qualification aims to enhance your profile as an engineer, so that you get to stand out in one of the areas with the greatest professional future"

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
- Master 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

Achieve your highest goals, thanks to a program in IIoT that will meet your needs in a short time and with maximum efficiency"



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

- Better understanding of the main automation and control systems, their connectivity, the types of industrial communications and the type of data they exchange
- Convert the production process facilities into a true Smart Factory
- 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

Module 3. Internet of Things (IoT)

- Know in detail the functioning of IoT and Industry 4.0 and its combinations with other technologies, its current situation, its main devices and uses and how hyper-connectivity 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 IoT

03

Course Management

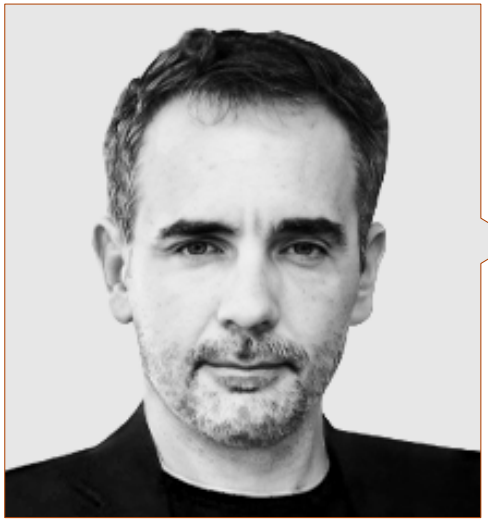
The management and teaching staff of this Postgraduate Diploma in Industrial Internet of Things (IIoT) are part of the team of experts of TECH. These professionals have poured their most specialized knowledge and their outstanding career in contents that will meet the highest expectations.

TECH has selected an outstanding teaching team to obtain the most up-to-date and complete knowledge of the academic market"

Management

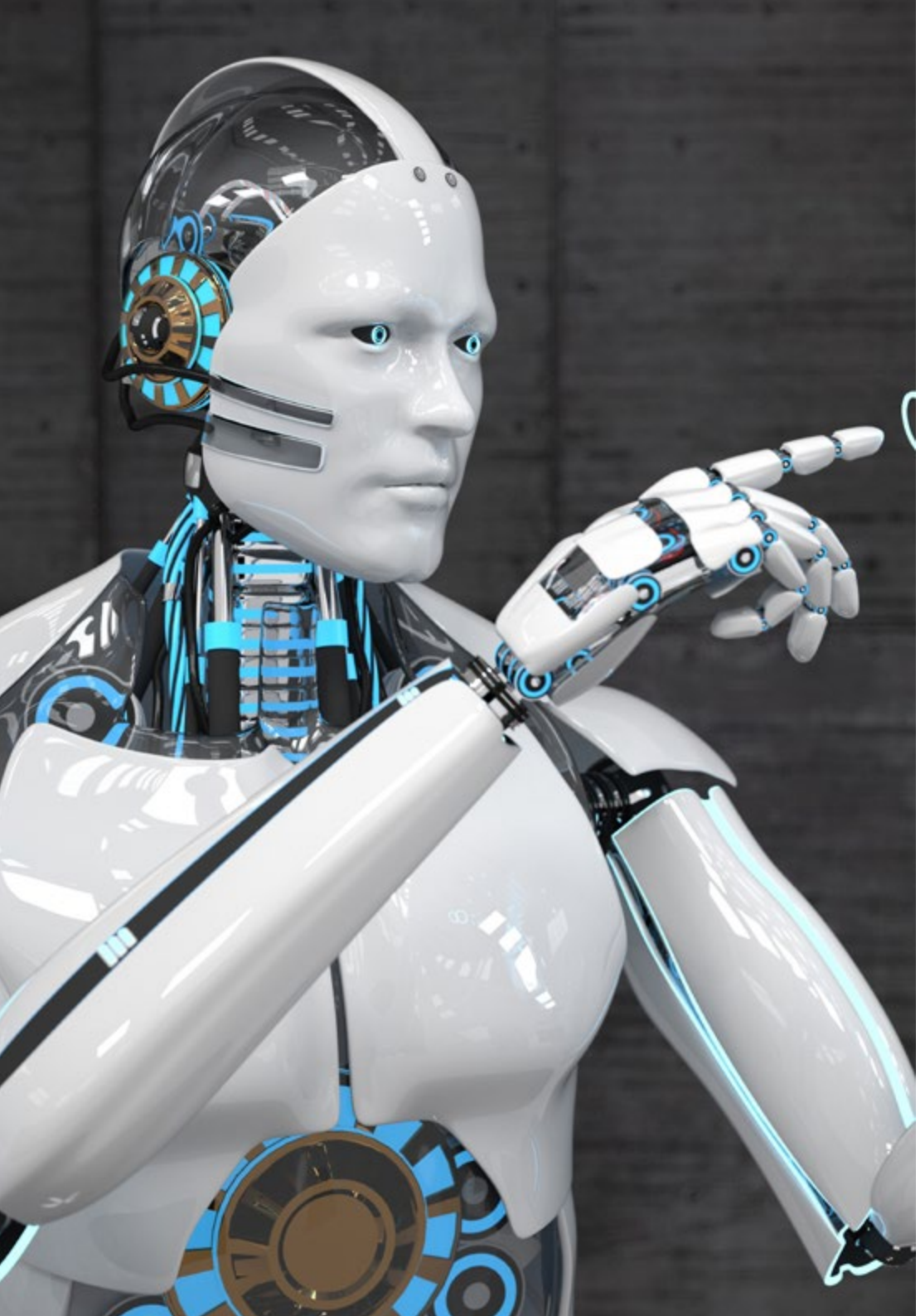
Mr. Segovia Escobar, Pablo

- 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: 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

A unique, key, and decisive educational experience to boost your professional development"

04

Structure and Content

The structure and content of this syllabus have been designed by outstanding working professionals, who are part of the team of experts to TECH, in IIoT These specialists have focused their experience on all teaching materials, to shape a unique program, also based on the most efficient pedagogical methodology, Relearning.

With Relearning, you can achieve your goals in a natural, progressive and fast way"

Module 1. Industry 4.0

1.1. Definition of 4.0 Industry
  1.1.1. Features
1.2. Benefits of the 4.0 Industry
  1.2.1. Key Factors
  1.2.2. Main Advantages
1.3. Industrial Revolutions and Vision of the Future
  1.3.1. Industrial Revolutions
  1.3.2. Keys Factors in Each Revolution
  1.3.3. Technological Principles as a Basis for Possible New Revolutions
1.4. The Digital Transformation of the Industry
  1.4.1. Characteristics of the Digitization of the Industry
  1.4.2. Disruptive Technologies
  1.4.3. Applications in the Industry
1.5. Forth Industrial Revolution. Key Principles of Industry 4.0
  1.5.1. Definitions
  1.5.2. Key Principles and Applications
1.6. 4.0 Industry and Industrial Internet
  1.6.1. Origin of IIoT
  1.6.2. Operation
  1.6.3. Steps to Follow for its Implementation
  1.6.4. Benefits
1.7. Smart Factory Principles
  1.7.1. The Smart Factory
  1.7.2. Elements that Define a Smart Factory
  1.7.3. Steps to Deploy a Smart Factory
1.8. Status of the 4.0 Industry
  1.8.1. Status of the 4.0 Industry in Different Sectors
  1.8.2. Barriers to the Implementation of 4.0 Industry
1.9. Challenges and Risks
  1.9.1. SWOT Analysis
  1.9.2. Challenges
1.10. Role of Technological Capabilities and the Human Factor
  1.10.1. Disruptive Technologies in Industry 4.0
  1.10.2. The Importance of the Human Factor Key Factor

Module 2. 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 Twin
- 3.5.1. Digital Twin
- 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

You will be able to access all the material and a wide variety of additional information on IIoT, from the first moment and with total freedom"

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

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

Relearning Methodology

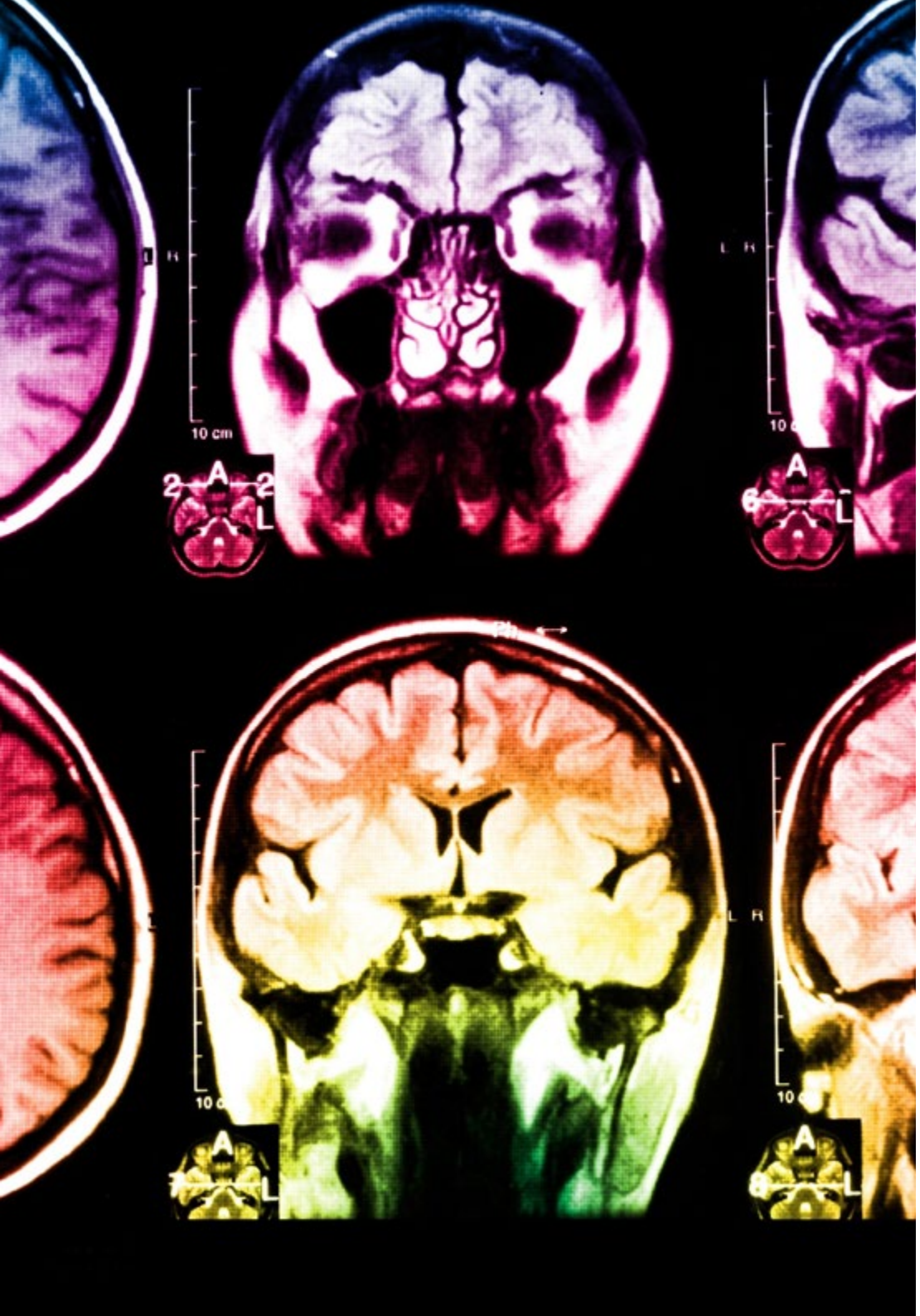
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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

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

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

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



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

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

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

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

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

Study Material

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

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

Classes

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

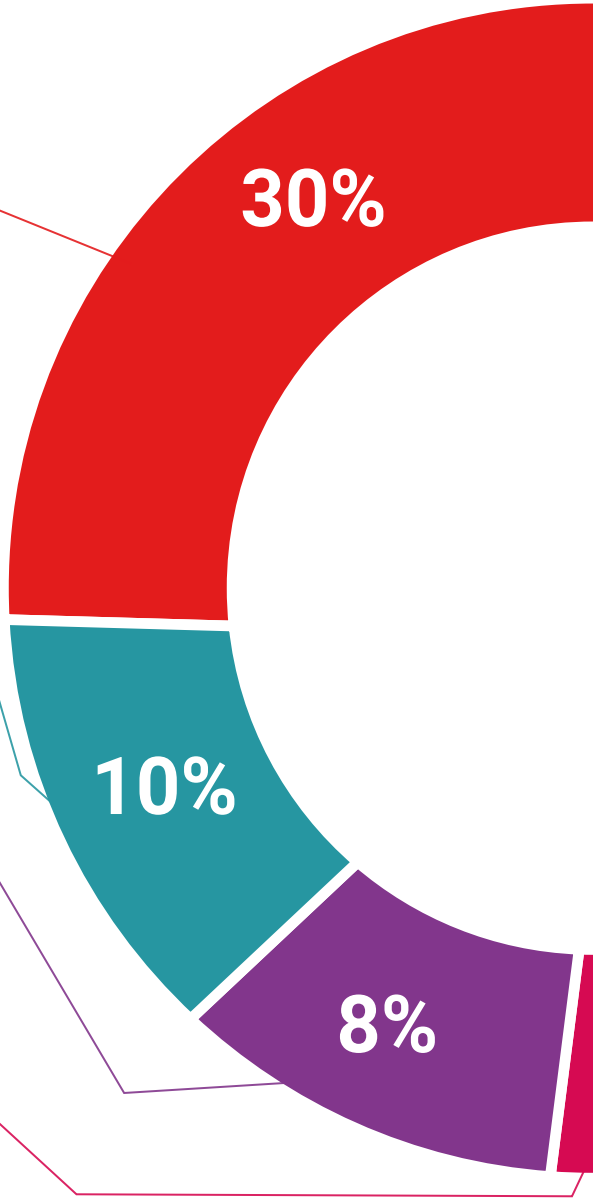
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

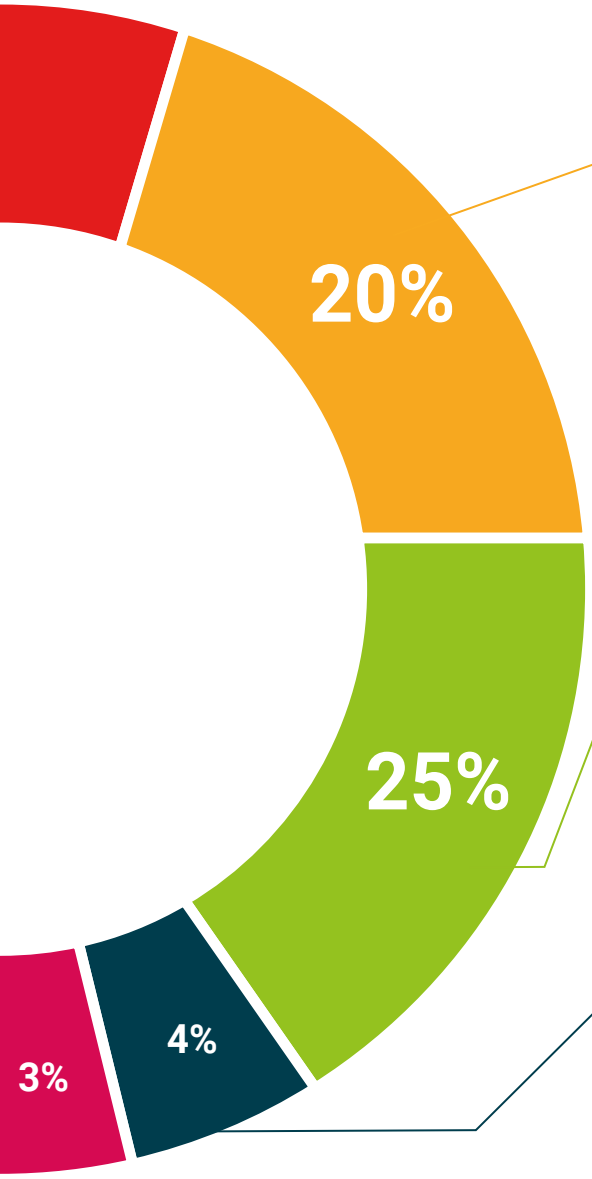
Practising Skills and Abilities

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

Additional Reading

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





Case Studies

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

Interactive Summaries

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

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

Testing & Retesting

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

06

Certificate

The Postgraduate Diploma in Industrial Internet of Things (IIoT), guarantees in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in Industrial Internet of Things (IIoT)** contains the most complete and up-to-date program on the market.

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

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

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

Official Nº of Hours: **450 h.**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Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Industrial Internet of Things (IIoT)

This is a qualification awarded by this University, equivalent to 450 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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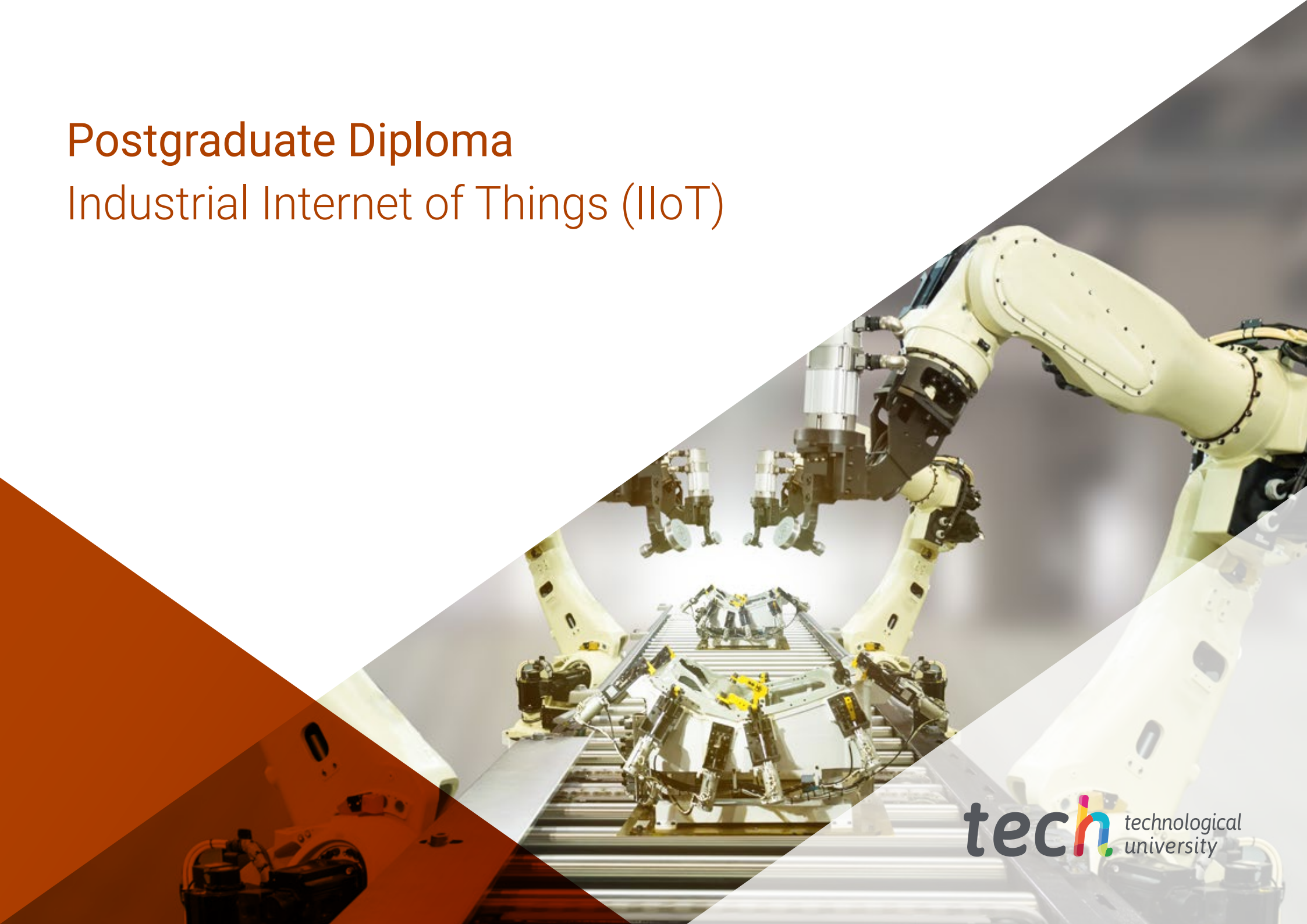

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