

# Postgraduate Certificate IoT in the Industry



## Postgraduate Certificate IoT in the Industry

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

Website: [www.techtitute.com/us/engineering/postgraduate-certificate/lot-the-industry](http://www.techtitute.com/us/engineering/postgraduate-certificate/lot-the-industry)

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# 01

# Introduction

In the era of technological industrialization, the initial basis for the digitization of an enterprise is the Internet of Things (IoT). Enterprises have begun to increase their investments in tools and solutions to integrate their assets into a single data collection and analysis chain. While the term IoT engineer is broad, there are many discipline areas that are involved, including security, networking, cloud and hardware device programming. This online program prepares the graduate to acquire the necessary skills to work in this field and to be able to design IoT architectures that ensure the correct harvesting and processing of data.





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*It addresses an area of both innovative and versatile work, the Internet of Things, from home automation to industrial sectors or security”*

The Internet of Things (IoT) is an area of work that is as innovative as it is versatile, providing better visibility and insight into a company's operations and assets through the integration of machine sensors, software programs, computer systems and cloud storage.

IoT technology is one of the reasons why the term Industry 4.0 is known today. It is a concept that has changed the industry in many ways, as it has a wide range of applications. This Postgraduate Certificate develops the different options available in the market at this time and delves into the overall structure of an IoT project according to the sector.

During this program, the engineer will analyze the different data architecture options, as well as the methodology to carry out a good development of the project. In this way, you will acquire a technical-practical vision, approach, and management of IoT projects.

Additionally, the student has the best study methodology 100% online, which eliminates the need to attend classes in person or have to comply with a predetermined schedule. In this way, in only 6 weeks you will delve into the scope of application of The Internet of Things, understanding the competitive advantages it provides, so you will be positioned at the technological forefront and will be able to lead ambitious projects in the present and in the future.

This **Postgraduate Certificate in IoT in the Industry** contains the most complete and up-to-date program on the market. Its most notable features are:

- ◆ Practical cases presented by experts in IoT in the Industry
- ◆ 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



*You are looking at a high-level program, aimed at those engineers who want to lead the digital transformation and evolution in the world"*

“ *IoT technology comprises a wide range of products that can be used in very creative ways to improve processes and shorten the time it takes to process information*”

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.

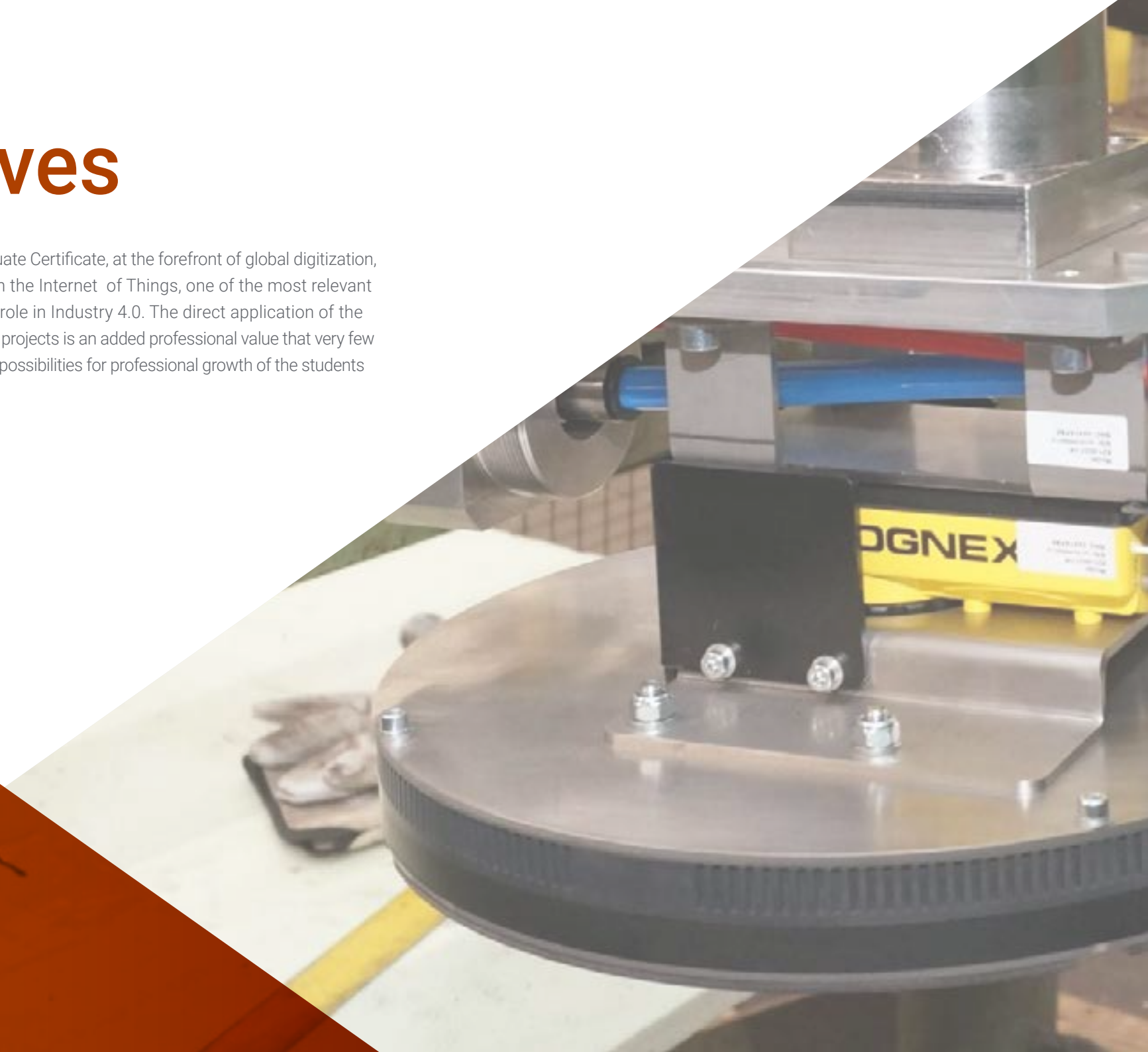
*The application of IoT in the industry can bring intelligence to the factory, improve process efficiency and reduce the probability of errors.*

*If you want to turn your company into the digital factory of the future, then you need to start harnessing the potential of the IoT framework now.*



# 02 Objectives

The main objective of this Postgraduate Certificate, at the forefront of global digitization, is to make a technical immersion in the Internet of Things, one of the most relevant technologies that will play a major role in Industry 4.0. The direct application of the knowledge acquired about IoT in real projects is an added professional value that very few computer scientists can offer, so the possibilities for professional growth of the students of this program are immense.







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*You will acquire the ability to quantify the IoT value contribution to Engineering and to quantify economically this type of technology”*



## General Objectives

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- ◆ Establish the basis for a correct foundation in the IoT, EloT and IloT field
- ◆ Analyze the different options available on the market
- ◆ Propose different possibilities of IoT project development to assess each situation with the acquired knowledge
- ◆ Acquire a global vision of the IoT project as the project as a whole provides greater added value

“

*Monitor the performance of your production system and make your industrial plant reach its natural evolution"*





## Specific Objectives

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- ◆ Establish the appropriate criteria to start and manage a project in an IoT environment
- ◆ Analyze the most relevant IoT architecture techniques
- ◆ Examine, in-depth, the existing free software options
- ◆ Delve into all areas where technology can be added to connected objects
- ◆ Monitor projects through a *Dashboard*
- ◆ Acquire the ability to quantify not only the value contribution of IoT to society, but also to quantify economically this type of technology

# 03

# Course Management

Experts in the field of information and communication technologies come together in this Postgraduate Certificate to teach graduates the newest technologies and areas of study and the most disruptive and surprising practical applications that can be found. The teachers will give tools and techniques for the engineer to analyze demo and predictive maintenance cases, as well as the approach to an IoT project.





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*Enter the Fourth Industrial Revolution with engineers who use IoT in their day-to-day work"*

## Management



### Mr. Molina Molina, Jerónimo

- ♦ Head of the Artificial Intelligence Department at Ibermática
- ♦ IA Engineer & Software Architect at NASSAT - Internet Satellite in Motion
- ♦ Senior Consultant at Hexa Ingenieros. Introducer of Artificial Intelligence (ML and CV).
- ♦ Expert in Artificial Intelligence Based Solutions, in the fields of Computer Vision, ML/DL and NLP
- ♦ Expert in Business Creation and Development at Bancaixa - FUNDEUN Alicante
- ♦ Computer Engineer from the University of Alicante
- ♦ Master's Degree in Artificial Intelligence from the Catholic University of Avila
- ♦ Executive MBA (European Business Campus Forum)

## Professors

### Mr. Viguera Gallego, Ander

- ♦ Process Engineer at Integral Rings
- ♦ VSM Engineer in the Small Spans line for Safran ITP Aero Castings
- ♦ VSM Engineer in the structural rings line for PWA & RR ITPAero Castings
- ♦ Industry 4.0 & IIoT Focal Point at ITPAeroCastings (Sestao)
- ♦ Graduate in Industrial Organization Engineering from ETSI Bilbao
- ♦ Master's Degree in Industrial Organization Engineering by ETSI Bilbao
- ♦ Master's degree in Industrial Strategy and Organization, ESTIA Institute of technology, Bidart
- ♦ Master's Degree in Artificial Intelligence from the Catholic University of Avila



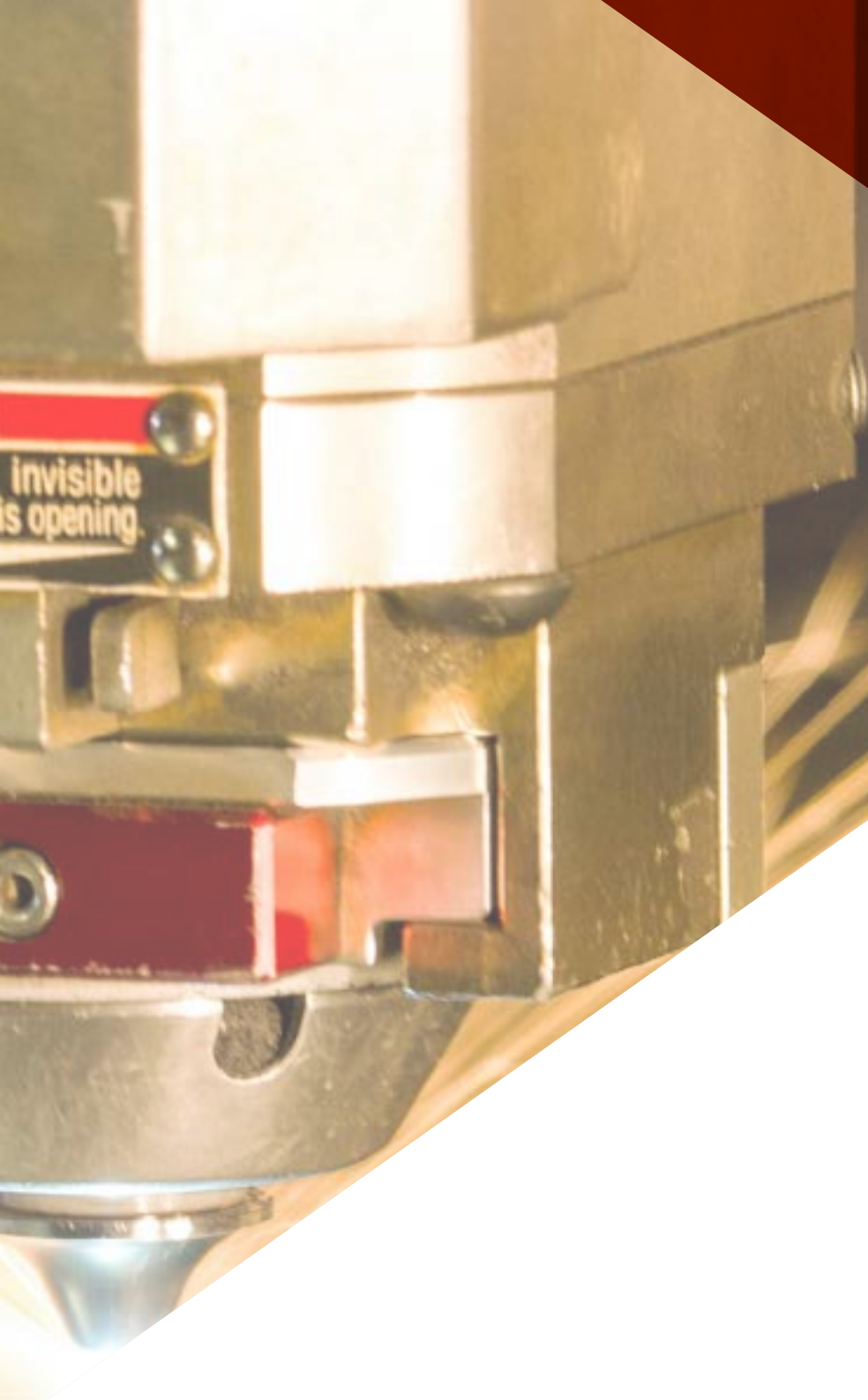
# 04

## Structure and Content

From a practical and innovative business perspective, this program develops the different options currently available on the market, and delves into the overall structure of an industrial IoT project, since the initial design must ensure the scalability and evolution of this. In this way, this Postgraduate Certificate gives an eminently practical approach to its contents so that the professional who successfully completes it has the ability to apply IoT as a technological basis for the digitization of the industry.





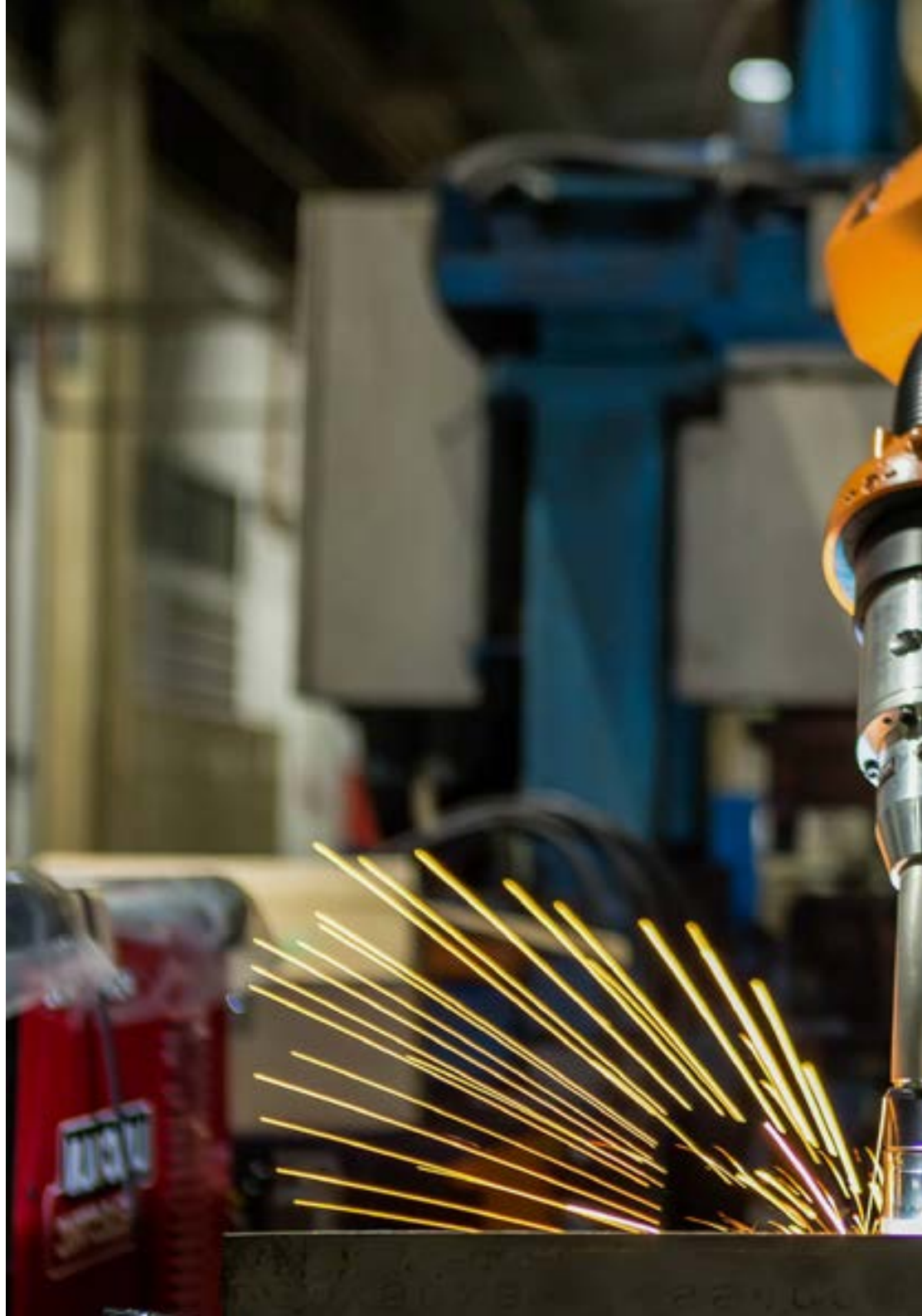


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*It addresses an area of both innovative and versatile work, from home automation to industrial sectors or security”*

## Module 1. IoT. Service Applications and i4.0. (4.0. Industries)

- 1.1. IoT. Internet of Things
  - 1.1.1. IoT
  - 1.1.2. Internet of Things
  - 1.1.3. Privacy and Object Control
- 1.2. Applications of IoT
  - 1.2.1. IoT Applications Consumption
  - 1.2.2. EIoT & IIoT
  - 1.2.3. IoT Administration
- 1.3. IoT & IIoT. Differences
  - 1.3.1. IIoT. IoT Differences
  - 1.3.2. IIoT. Application
  - 1.3.3. Industries
- 1.4. Industry 4.0, , Big Data& Business Analytics
  - 1.4.1. Industry 4.0, , Big Data& Business Analytics
  - 1.4.2. Industry 4.0, , Big Data& Business Analytics. Contextualization
  - 1.4.3. CRISP-DM Decisions and Methodology
- 1.5. Predictive Maintenance
  - 1.5.1. Predictive Maintenance. Application
  - 1.5.2. Predictive Maintenance. Model Development Approach
- 1.6. I. IoT Solutions Implementation Tool
  - 1.6.1. Research and Innovation in Information and Ethos Technologies
  - 1.6.2. End-to-End Products
  - 1.6.3. IoT Eclipse Examples of Use
- 1.7. iot.eclipse.org II. Advanced
  - 1.7.1. Architecture
  - 1.7.2. End-to-End
  - 1.7.3. Environment Analytics





- 1.8. IIoT Architecture
  - 1.8.1. Sensors and Actuators
  - 1.8.2. Internet Ports and Data Acquisition Systems
  - 1.8.3. Data Pre-Processing
  - 1.8.4. Cloud Data Analysis and Modeling
- 1.9. End-to-End Open and Modular Architecture
  - 1.9.1. End-to-End Open and Modular Architecture
  - 1.9.2. Modular Architecture. Key Components
  - 1.9.3. Modular Architecture. Benefits
- 1.10. Machine Learning at the Core and Edge
  - 1.10.1. PoC
  - 1.10.2. Data Pipeline
  - 1.10.3. Edge to Core & Demo

“ *IoT will help you in the search for new business opportunities and will provide you with a wide difference from your competition*”

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



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

This **Postgraduate Diploma in IoT in the Industry** 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**.

The diploma 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 Certificate in IoT in the Industry**

Official N° of Hours: **150 h.**



future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
classroom



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