



» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

» Target Group: engineers, architects and graduates who want to learn and update themselves on the latest technological trends and digitalization processes that will help them lead technological innovation and business transformation. It is also highly recommended for innovation managers who want to create value within their area and organizations, relying on the emerging technologies of Industry 4.0, knowing them and making an intelligent selection and application of them to meet customer expectations

Website: www.techtitute.com/us/school-of-business/postgraduate-diploma/postgraduate-diploma-automation-artificial-intelligence

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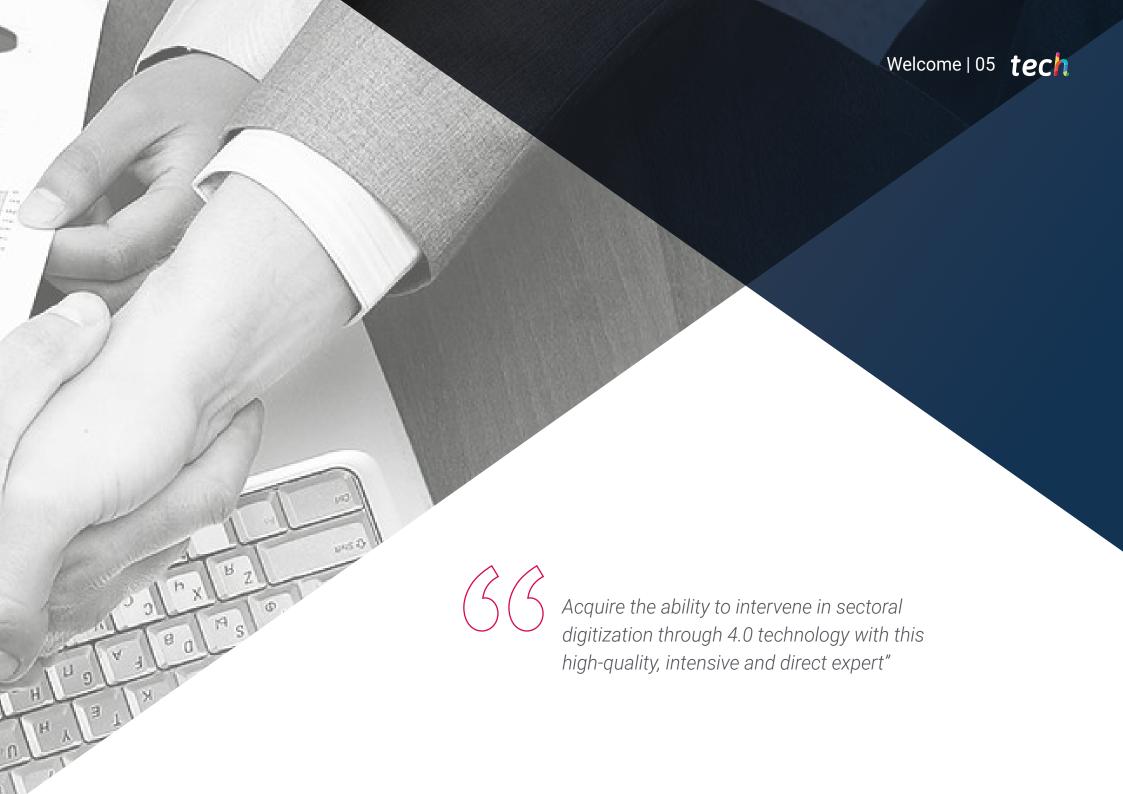
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Certificate

01 **Welcome**

The incursion of artificial intelligence in the industrial field has meant the modification of production methods and of many processes that have been affected by automation. This AI revolution is in full swing and involves restructuring many industrial fields, so the professional needs a broad and updated mastery of this new reality. By studying this program, the student is not only gaining a series of fundamental knowledge of the industry, but will also greatly increase his or her ability to move up the career ladder and achieve positions of greater responsibility and prestige.







tech 08 | Why Study at TECH?

At TECH Technological University



Innovation

The university offers an online learning model that balances 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.

+100000

+200

executives prepared each year

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.



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 analyses in academia"

Why Study at TECH? | 09 tech

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



Analysis

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



Academic Excellence

TECH offers students the best online learning methodology. The university combines the *Relearning* methodology (the most internationally recognized postgraduate learning methodology) with Harvard Business School case studies. A complex balance of traditional and state-of-the-art methods, within the most demanding academic framework.



Economy of Scale

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 ground-breaking price**. This way, TECH ensures that studying is not as expensive for students as it would be at another university.





tech 12 | Why Our Program?

This program will provide you with a multitude of professional and personal advantages, among which we highlight the following:



A Strong Boost to Your Career

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 students achieve positive career development in less than 2 years.



Develop a strategic and global vision of the company

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

Our global vision of companies will improve your strategic vision.



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.



You will 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.



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.



Thoroughly develop business projects

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

20% of our students develop their own business idea.



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.



You will be part of an exclusive community

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

We give you the opportunity to study with a team of world-renowned teachers.



The Postgraduate Diploma in Automation and Artificial Intelligence is designed to lead the professional to acquire the theoretical and practical knowledge necessary to take advantage of the functionalities of the application of this technology in diverse and interesting industrial fields. An intensive learning that will give the student the mastery of the main novelties in this field, which will allow him to practice his profession with the highest quality and professionalism.

This process is driven by a staggering increase in data volume, computing power and connectivity.



tech 16 | Objectives

Your goals are our goals.

We work together to help you achieve them

The Postgraduate Diploma in Automation and Artificial Intelligence will train you to:



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



Deepen the knowledge of the fundamental principles of artificial intelligence



To master the techniques and tools of this technology (machine learning/deed learning)



Obtain a practical knowledge of one of the most widespread applications such as chatbots and online assistants



Acquire knowledge of the different transversal applications that this technology has in all fields



Entering the world of robotics and automation







Choose a robotic platform, prototype and know in detail simulators and robot operating system (ROS)

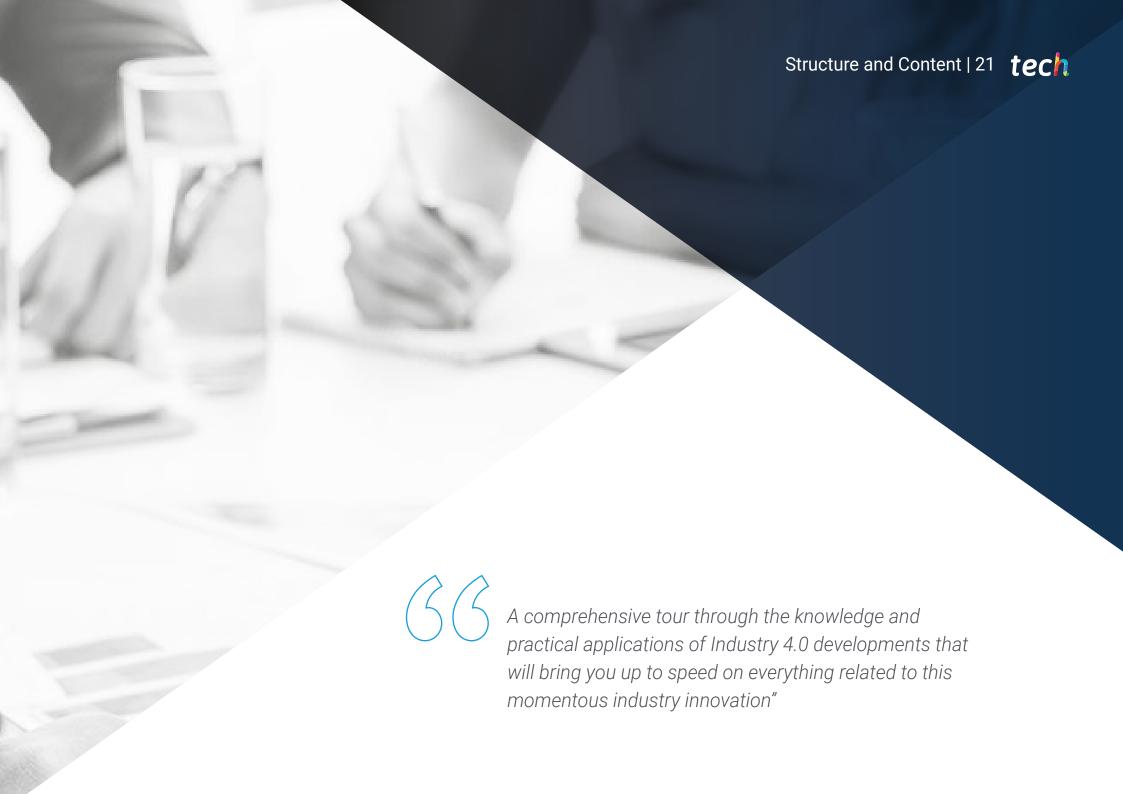


Deepen in the applications of artificial intelligence to robotics oriented to predict behaviors and optimize processes



Study robotics concepts and tools, as well as use cases, real examples and integration with other systems





tech 22 | Structure and Content

Syllabus

TECH's Postgraduate Diploma in Automation and Artificial Intelligence is an intensive program updated to the market reality and new needs in digitization and automation, crisis management and incorporation of new exponential and emerging technologies.

During the program we will not only deepen the theoretical study of Industry 4.0 and the sectoral solutions of application in relation to this field. In addition, real practices will be carried out with different technologies that will enable the student to be fully qualified in this field.

Over 450 hours of study, students will analyze a multitude of practical cases through individual work, which will allow them to acquire skills required to develop successfully in their daily practice. It is, therefore, an authentic immersion in real business situations.

This program deals in depth with different areas of the company and is designed for managers to understand project management from a strategic, international and innovative perspective. A plan designed especially for students, focused on their professional improvement and preparing them to achieve excellence in the field of management and business management. A program that understands your needs and those of your company through innovative content based on the latest trends, supported by the best educational methodology and an exceptional faculty, which will provide you with the skills to solve critical situations in a creative and efficient way.

This is a 6-month program divided into 3 modules:

Module 1 Industry 4.0 Automation Systems

Module 2 Big Data and Artificial Intelligence

Module 3 Robotics, Drones and Augmented Workers



Where, when, and how it is taught

TECH offers the possibility of developing this Postgraduate Diploma in Automation and Artificial Intelligence completely online. Throughout the 6 months of the educational program, you will be able to access all the contents of this program at any time, allowing you to self-manage your study time.

Delve into the study of cybersecurity and manage to prevent computer attacks in your company.

tech 24 | Structure and Content

Mod	Jule 1. Industry 4.0 Automation Systems	S					
	Industrial Automation Automization Architecture and Components Safety	1.2. 1.2.1. 1.2.2.	Industrial Robotics Fundamentals of Industrial Robotics Models and Impact on Industrial Processes	1.3.2.	PLC Systems and Industrial Control PLC Evolution and Status Evolution of Programming Languages Computer Integrated Automation CIM		Sensors and Actuators Classification of Transducers Types of Sensors Standardization of Signals
1.5. 1.5.1. 1.5.2.	Monitor and Manage Types of Actuators Feedback Control Systems	1.6. 1.6.1. 1.6.2.	Industrial Connectivity Standardized Fieldbuses Connectivity	1.7. 1.7.1. 1.7.2. 1.7.3.	Proactive/Predictive Maintenance Predictive Maintenance Fault Identification and Analysis Proactive Actions Based on Predictive Maintenance	1.8. 1.8.1. 1.8.2.	Prescriptive Maintenance Prescriptive Maintenance Concept in Industrial Environments
1.9. 1.9.1. 1.9.2.	9	1.10.1 1.10.2 1.10.3	Industrialized Processes in Industry 4.0. Use Case Project definition Technological Selection Connectivity Data Exploitation				



All the necessary aspects to drive the implementation of 4.0 technologies in different sectors, presented to favor the most efficient comprehension of the contents"

Mod	ule 2. Big Data and Artificial Intelligenc	e					
2.1.1.	Fundamental Principles of Big Data Big Data Tools to Work With Big Data	2.2.1. 2.2.2.	Data Mining and Warehousing Data Mining Cleaning and Standardization Information Extraction, Machine Translation, Sentiment Analysis, etc Types of Data Storage		Data Intake Applications Principles of Data intake Data Ingestion Technologies to Serve Business Needs	2.4.1.	Data Visualization The Importance of Data Visualization Tools to Carry It Out Tableau, D3, matplotlib (Python), Shiny®
2.5. 2.5.1. 2.5.2.	Machine Learning Understanding Machine Learning Supervised and Unsupervised Learning	2.6.1.	Neural networks (deep learning) Neural Network: Parts and Functionality Types of Networks CNN, RNN	2.7.1.	Natural Language Recognition PLN (Processing Natural Language) Advanced PLN Techniques: Word2vec,	2.8. 2.8.1. 2.8.2.	
2.5.3.	Types of Algorithms		Applications of Neural Networks; Image Recognition and Natural Language Interpretation Generative Text Networks: LSTM		Doc2vec		Assistant: Intents, Entities and Dialog flow Integraciones: Web, Slack, Whatsapp, Facebook Assistant Development Tools: Dialog Flow, Watson Assistant
2.9.1.	Emotions, Creativity and Personality in IA Understand How to Detect Emotions Using Algorithms Creating a Personality: Language, Expressions and Content	2.10.	. Future of Artificial Intelligence	2.11.	Reflections		
Mad		- l \ \ /l					
Moa	ule 3. Robotics, Drones and Augmente	a vvork	kers				
3.1.1.	Robotics Robotics, Societies and Cinema Components and Parts of Robot		Robotics and Advanced Automation: Simulators, Cobots		RPA (Robotic Process Automatization)		Robot as a Service (RaaS) Challenges and Opportunities for
			Transfer of Learning Cobots and Case Uses		Understanding RPA and its Functioning RPA Platforms, Projects and Roles	3.4.2.	Implementing RaaS Services and Robotics in Enterprises Functioning of a RaaS system
3.5.	Drones and Automated Vehicles	3.6.	The Impact of 5G	3.7.	Augmented Workers	3.8.	Transparency, Ethics and
	and the second s	3.6.1.	Evolution of Communications and Implications	3.7.1.	Human - Machine Integration in Industrial Environments	201	Traceability Ethical Challenges in Robotics and Artificial
			Uses of 5G Technology	3.7.2.	Challenges in Worker-Robot Collaboration		Intelligence Monitoring, Transparency and Traceability Methods
3.9.	Prototyping, Components and	3.10.	. Future of Robotics				
	Evolution		. Trends in Robotization				

3.10.2. New Types of Robots

3.9.1. Prototyping Platforms3.9.2. Phases to Make a Prototype



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.



tech 28 | Methodology

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.





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



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

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.

tech 30 | Methodology

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.



Methodology | 31 **tech**

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.





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

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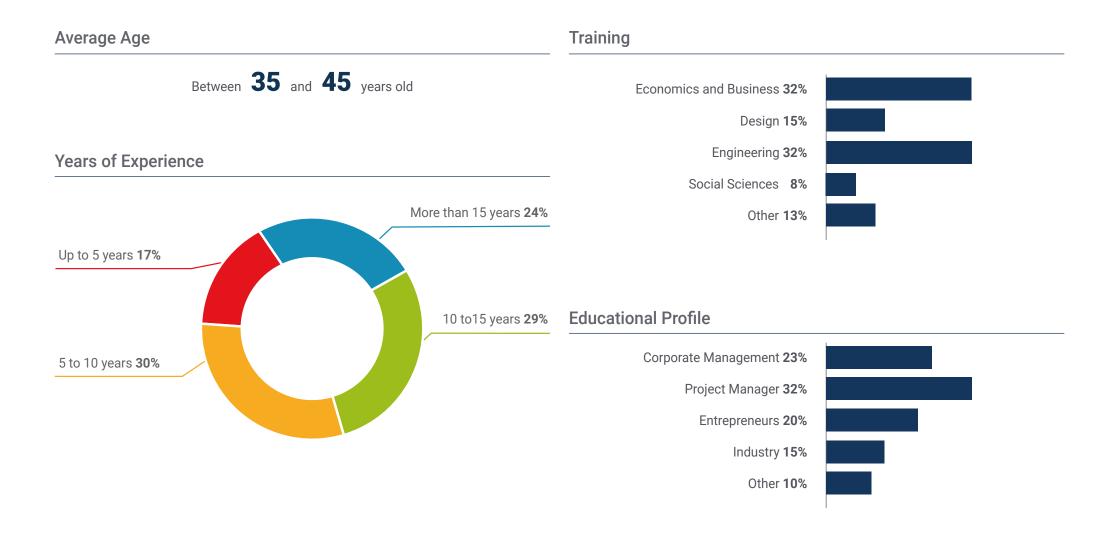
We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



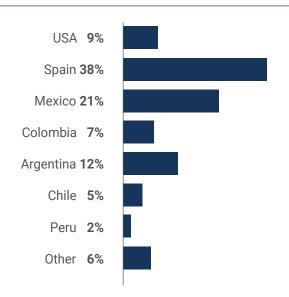
30%







Geographical Distribution





James Jiménez Glasgow

Director of the production management area

"Intensive, interesting and very up-to-date... the truth is that everything that this Postgraduate Diploma has given me has been positive in every way, both for my career and for myself at a professional level"





Management



Mr. Pablo Segovia Escobar

- Industrial Engineer, Project Management Professional (PMP) por el Program Management Institute
- Master in Business Administration and Management
- Postgraduate in Strategic Management Function
- Sales Manager and Program Manager with extensive experience (more than 12 years) in project management
- Current commercial manager of the Aftermarket and Industry 4.0 area applied to the support of systems at Indra



Mr. Pedro Diezma López

- Entrepreneur, writer, TEDx speaker and expert in emerging and exponential technologies
- Founder of the technology companies Acuilae (Artificial Intelligence), Ethyka and Zerintia Technologies
- Wearable "Best Initiative" Award in eHealth 2017 and "Best Technological "Solution" 2018 for occupational safety
- One of the world's leading experts (Source: Onalytica) in Wearable Technology and Internet of Things



Course Management | 41 tech

Professors

Ms. Cristina Sánchez López

- Degree in Statistics from the Complutense University Madrid
- Master's Degree in Data Science
- 20 years of experience as IT (Software Engineer) for the Accenture Group in large clients such as Banco de Santander, BBVA, Endesa or Barclays Bank
- CEO and founder of Acuilae and ETHYKA

Mr. Francisco Castellano Nieto

- Industrial Electronic Technical Engineer by the Universidad Pontificia de Comillas I.C.A.I
- Extensive experience in industrial environments as a development engineer in R&D department in the sector of automatic packaging machines for solids, granulates . and liquids, packaging machines, palletizers and distribution chains; solutions with technologies from Siemens, Allen-Bradley (Rockwell Automation), Schneider, Omron and Beckhoff
- Responsible for the maintenance of defense equipment in the aeronautical, naval and terrestrial sectors at Indra





tech 44 | Impact on Your Career

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

The Postgraduate Diploma in Automation and Artificial Intelligence is an intensive, high-value program aimed at improving students' job skills in an area of broad competence. Undoubtedly, it is a unique opportunity to improve professionally, but also personally, as it involves effort and dedication.

Those who wish to improve themselves, achieve a positive change at a professional level and interact with the best, will find their place at TECH.

academic standards, this program will lead your career to success.

With the highest

This Postgraduate
Diploma is an invaluable
opportunity to acquire
the essential skills
in digitization in the
Industry 4.0 environment.

Generating Positive Change

Time of Change

During the program

40%

After 2 years

35%

Type of Change

Internal Promotion 33%
Change of Company 39%
Entrepreneurship 28%

Salary Increase

This program represents a salary increase of more than **25.22%** for our students.

\$57,900

A salary increase of

25.22%

\$75,500





tech 48 | Benefits for Your Company

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



Growth of talent and intellectual capital

The professional will introduce the company to new concepts, strategies, and perspectives that can bring about significant changes in the organization.



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.



Building agents of change

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



Increased international expansion possibilities

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





Project Development

The professional can work on a real project or develop new projects in the field of R & D or business development of your company.



Increased competitiveness

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





tech 52 | Certificate

This **Postgraduate Diploma in Automation and Artificial Intelligence** 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 diploma 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 Diploma in Automation and Artificial Intelligence
Official N° of hours: 450 h.



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



Postgraduate Diploma Automation and Artificial Intelligence

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

