Postgraduate Diploma
Digital Transformation

tech technological university

Postgraduate Diploma
Digital Transformation

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

Website: **www.techtitute.com/in/information-technology/postgraduate-diploma/postgraduate-diploma-digital-transformation**

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01
Introduction

In a digital world that is advancing at exponential speeds, it has become essential to have prototyping, simulation and behavior prediction tools that allow the development of systems in the shortest possible time and without errors, as is the case of Digital Twins. This 100% online degree will provide students with the necessary skills to apply them in their projects. In turn, it will teach the keys to a Smart City, a platform that will transform today's cities into more efficient, sustainable, safe and fun spaces, in addition to developing new business opportunities based on their own connectivity. All this acquiring the necessary skills to develop a global vision and specialized knowledge to design IoT architectures.

Position yourself at the forefront of technology and lead ambitious projects now and in the future"

In the midst of the current digital transformation, it is necessary to know the different options available in the market at this time To this end, the overall structure of an IoT project must be studied in depth according to the sector, since the initial design must guarantee the scalability and evolution of the project.

This program teaches students the necessary skills to develop a global vision and specialized knowledge to design IoT architectures that guarantee, in any project phase, the harvesting and processing of data. The graduate acquires a technical-practical vision, approach and management of IoT projects. It integrates devices of very different natures for the collection of information.

The Digital Twin, which has infinite applications and radically changes the laboratory or test models, will also be explored. By applying the implementation of a Digital Twin, the student will be able to simulate and perform unlimited tests before taking his project into production and operation. In addition, during the operation phase, it will allow you to anticipate failures or anomalous behavior by implementing advanced predictive maintenance algorithms.

At the same time, this Postgraduate Diploma will delve into the Smart City model, since it is expected that by 2024, 90% of the electronic devices used by the inhabitants of this type of cities will be connected to the Internet. The Smart City model developed in this program is based on a neural system of sensors that collect and return data in real time, turning it into an entity with a life of its own.

In addition, the graduate has the best 100% online study methodology, which eliminates the need to attend classes in person or have to comply with a predetermined schedule. In the course of 6 months, the student will deepen in the scope of application of each technology, understanding the competitive advantages they bring, so it will be positioned at the forefront of technology and can lead ambitious projects in the present and in the future.

This **Postgraduate Diploma in Digital Transformation** is the most comprehensive and up-to-date scientific program on the market. The most important features include:

♦ The development of case studies presented by Digital Transformation experts

♦ The graphic, schematic and eminently practical contents with which it is conceived provide and practical information on those 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

Acquire the best training in Digital Transformation in the market, without the need for fixed schedules or travel"

"*You will be technically immersed in the most relevant technologies that will play a major role in the technological advances of the coming years*"

With the implementation of a Digital Twin, you will be able to simulate and perform unlimited tests before taking your project into production and operation.

It analyzes the different options of Data Architecture, as well as the methodology to carry out a good development of the project.

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 training programmed to train 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 student will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Objectives

The Postgraduate Diploma in Digital Transformation is oriented to address the Internet of Things (IoT), Digital Twins and Smart Cities from a practical point of view. In this way, a sense of security is generated in the student which will allow them to be more effective in their daily practice. This is precisely what makes this Postgraduate Diploma unique in the market, since the computer scientists who take it will be unique professionals in their sector.

It develops the different options available on the market at this time and delves into the overall structure of an IoT project"

General Objectives

- Establish the basis for a correct foundation in the IoT, EIoT & IIoT environment
- Propose different possibilities of IoT project development to evaluate each situation with the acquired knowledge and that the student can
- Acquire a global vision of the IoT project, since the whole project as a whole provides greater added value
- Analyze the current landscape of Digital Twins and associated technologies
- Determine the main applications of the Digital Twins
- Propose application scenarios for technologies derived from the Digital Twins
- Present the current panorama of the Smart City model in different countries
- Analyze the advantages of a hyperconnected Smart City model
- Establish different Big Data models and their prediction models
- Propose application scenarios in different city typologies

Specific Objectives

Module 1. IoT Applications in Services and I 4.0 (Industries 4.0)

- Establish the appropriate criteria with which to start and manage a project in an IoT environment
- Analyze the most relevant IoT architecture techniques
- Develop thinking skills from start to finish Methodology (CRISP-DM)
- 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

Module 2. Digital Twins Innovative Solutions

- Acquire a detailed view of the influence of the Digital Twins on the future of product and service development
- Realizing the applications of the Digital Twins
- Demonstrate the utility of Digital Twins in the value chain
- Determine specific uses of Digital Twins
- Assessing the feasibility of implementing a Digital Twin
- Identify concrete cases of application of the Digital Twins
- Justify uses and models of Digital Twins
- Generate interest in the implementation of models

Module 3. *Smart Cities* as Innovation Tools

- Analyze the technological platform
- Determining what a Digital City Twin is (virtual model)
- Establish which are the monitoring layers: density, movement, consumptions, water, wind, solar radiation, etc
- Carry out a comparative analysis of the following variables
- Integrate the different sensor networks (IoT/M2M) as , well as the behavioral parameters of the inhabitants of the city (treated as human sensors)
- Develop a detailed vision of how *Smart Cities* will influence the future of people
- Generate interest in the implementation of smart city models

You will become a great computer scientist, an expert in the most advanced and most applicable technologies of the present and the future"

Course Management

Having been trained by accredited professionals who use them on a daily basis, the professional who successfully completes this program will have a global vision of the application of the different technologies involved in global digitalization and will have the ability to apply them. This Postgraduate Diploma in Digital Transformation has a highly qualified team with extensive experience in the sector, which will offer the best content for the specialization of the student during the course.

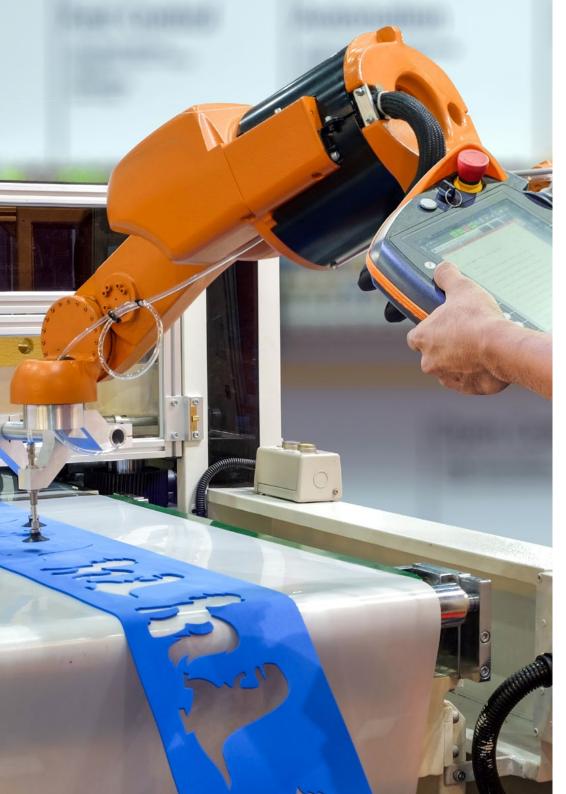*You will have the guarantee of specializing at an international level in a booming sector that will catapult you to professional success"*

Management

Mr. Molina Molina, Jerónimo

- He is currently leading several relevant projects in the field of Artificial Intelligence.
- IA Engineer & Software Architect. NASSAT-Internet Satellite in Motion
- Sr. Consultant Hexa Ingenieros
- Expert in Artificial Intelligence based solutions.
- He is currently leading several relevant projects in the field of Artificial Intelligence.
- Computer Engineer (Univ. Alicante)
- University Expert in Business Creation and Development (Bancaixa– FUNDEUN Alicante)
- Computer Engineer (Univ. Alicante)
- MBA-Executive (European Business Campus Forum)
- Master's Degree in Artificial Intelligence (Universidad Católica de Ávila)
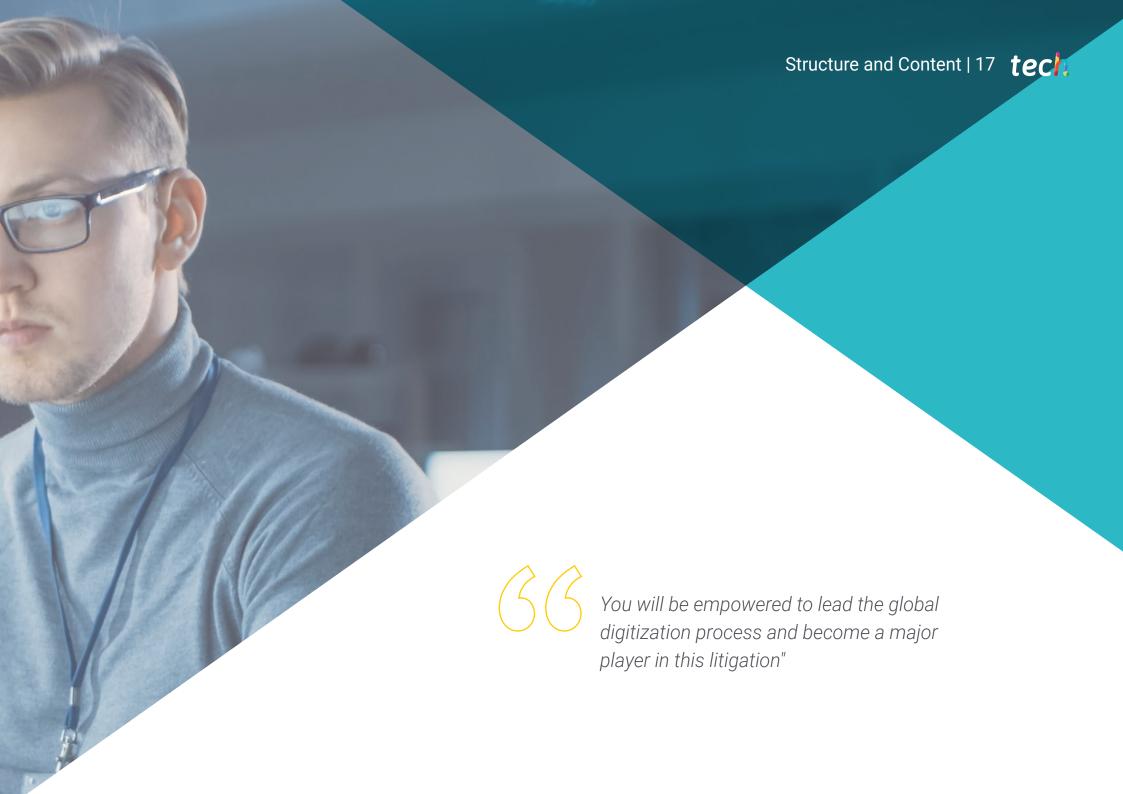
Professors

Mr. Viguera Gallego, Ander

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

Dr. Villalba García, Alfredo

- Professor of Home Automation Medicine at CEDOM
- Design Engineer at ITT Standard Electric and ALCATEL
- Industrial Engineer from the Technical School of Industrial Engineering of the Polytechnic University of Madrid.
- Specialist in Robotics and Automation
- Master's Degree in Technology for Retail
- Master's Degree in Industrial Automation
- Master's Degree in Domotics and Inmotics
- D. in computer science from the University of Fontainebleau
- CEO and Founding Partner of INMOMATICA and of CQUENT

Structure and Content

A curriculum deployed in 3 modules has been established, which offer a broad perspective of the Internet of Things (IoT), Digital Twins and Smart Cities. These subjects are covered in depth and with support material oriented to experienced professionals with a great interest in the topics of study. This means that the professional level is high, an important differential element of the Postgraduate Diploma. In this way, and with the support of a team of experts, students will be able to update their knowledge, which will enable them to develop professionally.

You will be empowered to lead the global digitization process and become a major player in this litigation"

Module 1. IoT Applications in Services and I 4.0 (Industries 4.0)

1.1. IoT The Internet of Things
  1.1.1. IoT
  1.1.2. Internet 0 & IoT
  1.1.3. Privacy and Object Control
1.2. Applications of IoT
  1.2.1. Applications of IoT: Consumption
  1.2.2. EIoT & IIoT
  1.2.3. IoT Administration
1.3. IoT & IIoT: Differences
  1.3.1. IoT: Differences with IoT:
  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. Decisions and Methodology CRISP-DM
1.5. Predictive Maintenance
  1.5.1. Predictive Maintenance Application
  1.5.2. Predictive Maintenance Focus of Development Models
1.6. IoT Solutions Implementation Tool (I)
  1.6.1. Micro NPU Ethos
  1.6.2. End-to-End Products
  1.6.3. Eclipse IoT Application Examples
1.7. IoT Advanced Solutions Implementation Tool (II)
  1.7.1. Architectures
  1.7.2. End-to-End
  1.7.3. Environment Analytics
1.8. IIoT Architecture Composition
  1.8.1. Sensors and Actuators
  1.8.2. Internet Ports and Data Acquisition Systems
  1.8.3. Data -Processor
  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

Module 2. Digital Twins Innovative Solutions

2.1. Digital Twins
  2.1.1. Digital Twins Basic Concepts
  2.1.2. Digital Twins: Technological Evolution
  2.1.3. Digital Twins: Typology
2.2. Digital Twins: Applicable Technologies
  2.2.1. Digital Twins: Platforms
  2.2.2. Digital Twins: Interfaces
  2.2.3. Digital Twins: Typologies
2.3. Digital Twins: Applications. Sectors and Examples of Use
  2.3.1. Digital Twins: Techniques and Uses
  2.3.2. Industries
  2.3.3. Architecture and Cities
2.4. Industry 4.0 Application of Digital Twins
  2.4.1. Industry 4.0
  2.4.2. Environment
  2.4.3. Application of Digital Twins in I 4.0
2.5. Smart Cities from the Digital Twins
  2.5.1. Models
  2.5.2. Categories
  2.5.3. Future of Smart Cities from the Digital Twins
2.6. IoT Applied to Digital Twins
  2.6.1. IoT: Link to Digital Twins
  2.6.2. IoT Relation with Digital Twins
  2.6.3. IoT: Problems and Possible Solutions
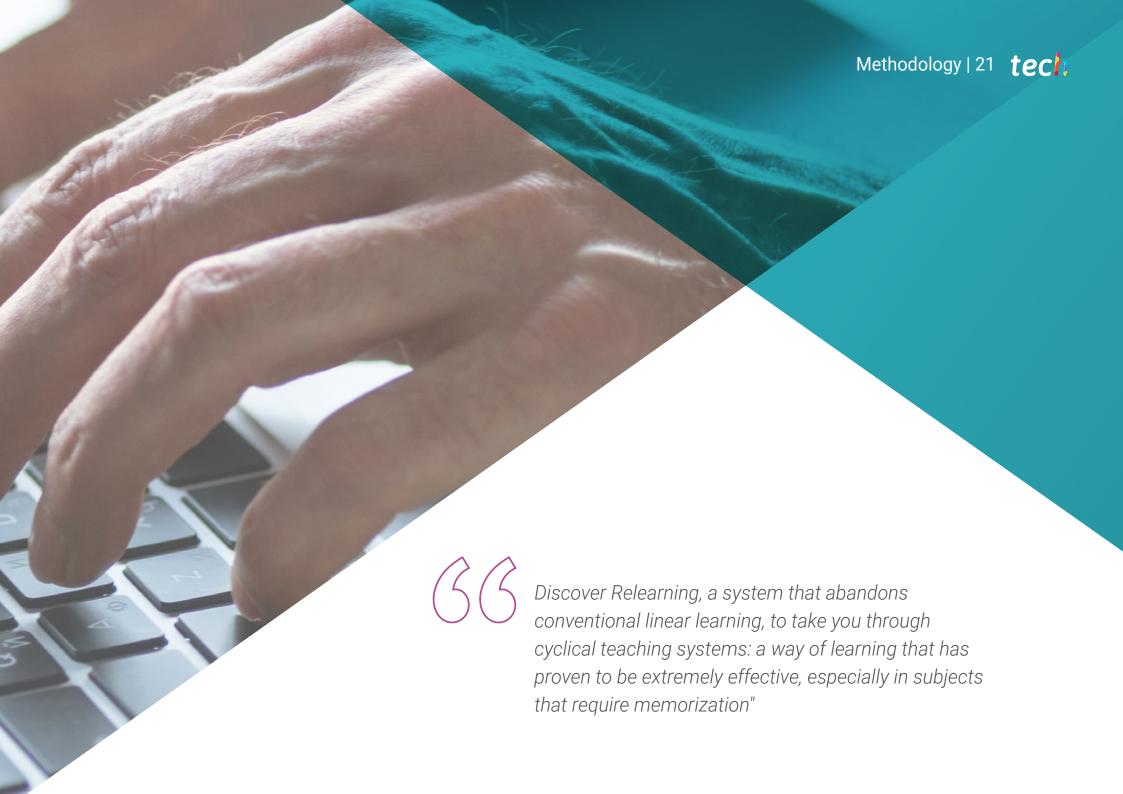
2.7. Environment of Digital Twins
    2.7.1. Companies
    2.7.2. Organisation
    2.7.3. Implications
2.8. Market of Digital Twins
    2.8.1. Platforms
    2.8.2. Suppliers
    2.8.3. Associated Services
2.9. Future of Digital Twins
    2.9.1. Immersivity
    2.9.2. Augmented Reality
    2.9.3. Biointerfaces
2.10. Digital Twins: Results in Present and Future
    2.10.1. Platform
    2.10.2. Technologies
    2.10.3. Sectors

Module 3. Smart Cities as Innovation Tools

3.1. From Cities to Intelligent Cities
    3.1.1. From Cities to Intelligent Cities
    3.1.2. Cities in Time and Cultures in Cities
    3.1.3. Evolution of City Models
3.2. Technologies
    3.2.1. Technological Application Platforms
    3.2.2. Services/Citizen Interfaces
    3.2.3. Technological Typologies
3.3. City as a Complex System
    3.3.1. City Components
    3.3.2. Interactions between Components
    3.3.3. Applications: Services and Products in the City

3.4. Intelligent Security Management
    3.4.1. Current Status
    3.4.2. Technological Management Environments in the City
    3.4.3. Future: Smart Cities in the Future
3.5. Intelligent Cleaning Management
    3.5.1. Application Models in Intelligent Cleaning Services
    3.5.2. Systems: Application of Intelligent Cleaning Services
    3.5.3. Future of Intelligent Cleaning Services
3.6. Intelligent Management of Traffic
    3.6.1. Traffic Evolution: Complexity and Factors Hindering Traffic Management
    3.6.2. Problem
    3.6.3. e-Mobility
    3.6.4. Solutions
3.7. Sustainable City
    3.7.1. Energy
    3.7.2. The Cycle of Water
    3.7.3. Management Platform
3.8. Intelligent Management of Leisure
    3.8.1. Business Models
    3.8.2. Evolution of Urban Leisure
    3.8.3. Associated Services
3.9. Management of Large Social Events
    3.9.1. Movements
    3.9.2. Capacity
    3.9.3. Health
3.10. Conclusions on the Present and Future of Smart Cities
    3.10.1. Technology Platforms and Issues
    3.10.2. Technologies, Integration in Heterogeneous Environments
    3.10.3. Practical Applications in Different City Models

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

30%

10%

8%

tech

20%

25%

3%

4%

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.

Certificate

The Postgraduate Diploma in Digital Transformation guarantees, in addition to the most rigorous and up-to-date training, access to a Postgraduate Diploma qualification issued by TECH Technological University.

Successfully complete this training program and receive your diploma without travel or laborious paperwork"

This **Postgraduate Diploma in Digital Transformation** is the most comprehensive and up-to-date scientific 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 from career evaluation committees.

Title: **Postgraduate Diploma in Digital Transformation**

Official Nº of Hours: **450 h.**

tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____ with identification number _____.
For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Digital Transformation

This is a qualification awarded by this University, equivalent to 500 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

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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