



Web Applications

» Modality: online

» Duration: 6 weeks

» Certificate: TECH Global University

» Credits: 6 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/information-technology/postgraduate-certificate/data-persistence-design-implementation-web-applications

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# tech 06 | Introduction

The expansion and constant evolution of the digital ecosystem leads IT professionals to constantly update their skills. In this sense, the boost of e-commerce and communication between users has increased the number of web applications and the volume of data circulating on the network.

In this context, it is essential for the IT specialist to master all the tools, techniques and actions aimed at improving the performance and security. For this reason, TECH has developed this Postgraduate Certificate in Data Persistence Design and Implementation for Web Applications of 180 teaching hours and developed by an excellent teaching team specialized in this area.

In this way, the students will delve into the persistence of application data, reviewing a wide range of storage solutions. They will also delve into the types of databases and their use cases, as well as alternatives based on file systems and cache-based optimization mechanisms. For this purpose, didactic materials such as video summaries, detailed videos, specialized readings and case study simulations are available.

A set of pedagogical tools that will provide greater dynamism and attractiveness to this academic itinerary. In addition, thanks to the Relearning method, based on the reiteration of content, the graduate will be able to reduce the long hours of study and memorization.

Students thus have a unique opportunity to achieve an education that will allow them to progress in their careers within the industry with a degree that is distinguished by its 100% online methodology. The student only needs a digital device with internet connection to visualize, at any time of the day, the content hosted on the virtual platform.

This Postgraduate Certificate in Data Persistence Design and Implementation for Web Applications contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by software experts and web developers
- The graphic, schematic and practical contents of the book provide theoretical and practical information on those disciplines that are essential for professional practice
- Practical exercises where the self-assessment process can be carried out to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions for experts, discussion forums on controversial issues and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection



# Introduction | 07 tech

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You will delve into the criteria to be considered to choose among all the persistence systems analyzed based on the requirements of the application"

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

Its 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 an immersive education programmed to learn in real situations.

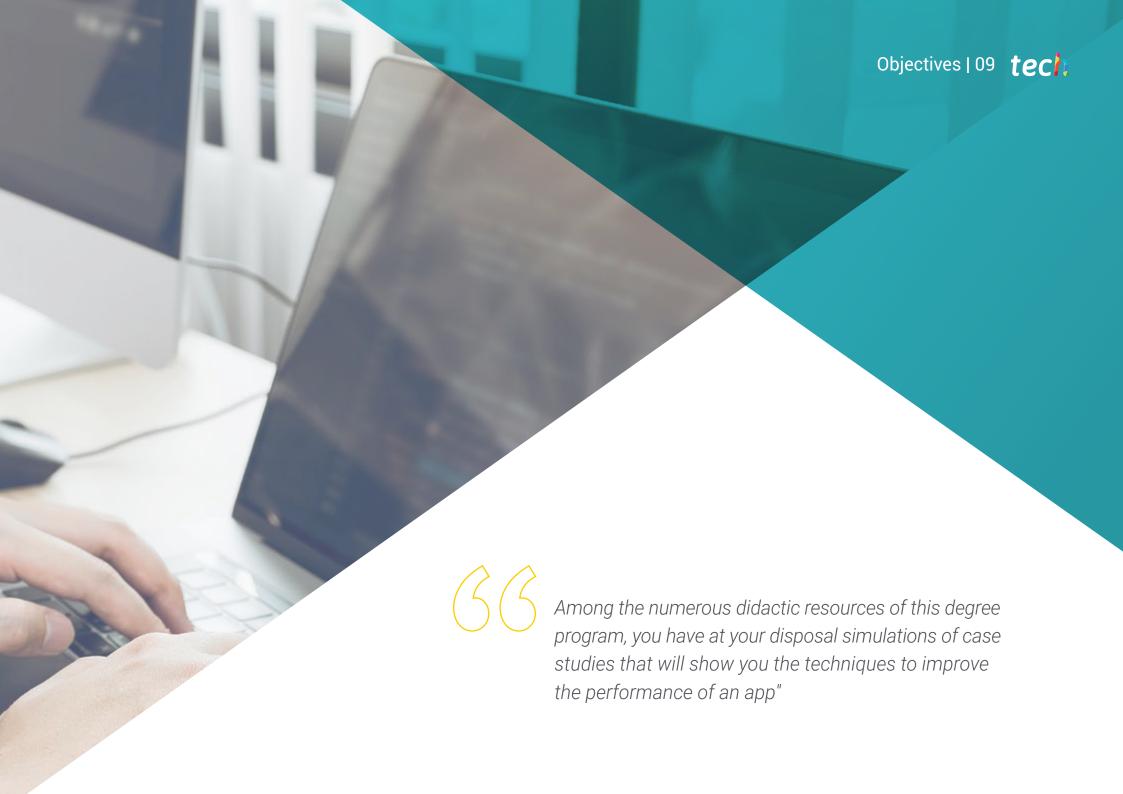
The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

Take a step forward in your career in the technology sector thanks to this 100% online and advanced Postgraduate Certificate.

Delve into search engines and data mining architectures when and where you want.and data mining architectures.





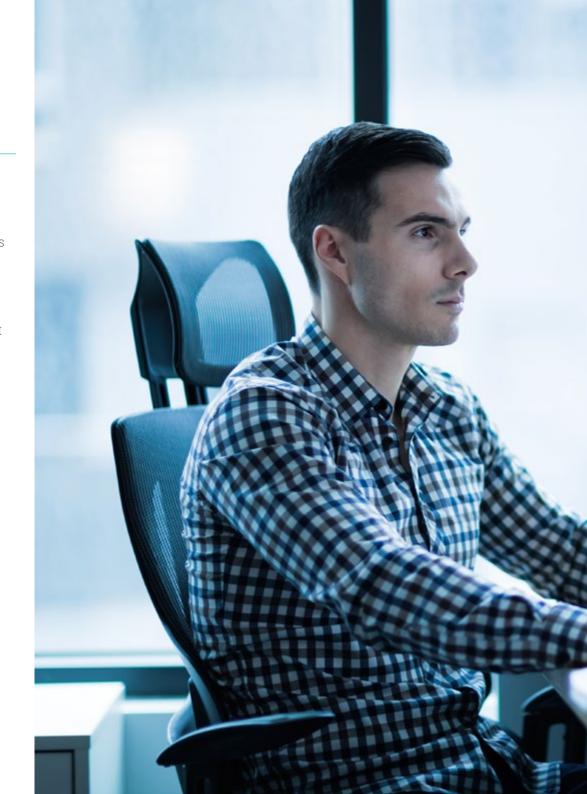


# tech 10 | Objectives



# **General Objectives**

- Implementation of security measures, such as strong authentication and authorization, and the use of firewalls and intrusion detection systems (IDS) to protect the application
- Thorough analysis of security issues, including identification of threats and vulnerabilities and vulnerabilities
- Review key features and vendors, planning migration scenarios and incorporating new roles and processes into project management
- Establish cloud computing as a growing alternative for the development and deployment of web applications







# **Specific Objectives**

- Examine the various options for persisting web application data
- Analyze the use of relational and non-relational databases
- Develop other types of databases
- Generate specialized knowledge of file storage use cases and tools
- Establish the motivations and solutions for search engines
- Develop advanced architectures for processing large amounts of data



TECH provides you with the Relearning system so that you can obtain advanced learning in a simple way and without investing long hours of study"

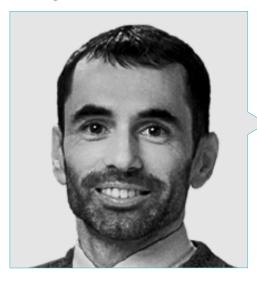






# tech 14 | Course Management

# Management



# Dr. Pantaleón García del Valle, Eduardo

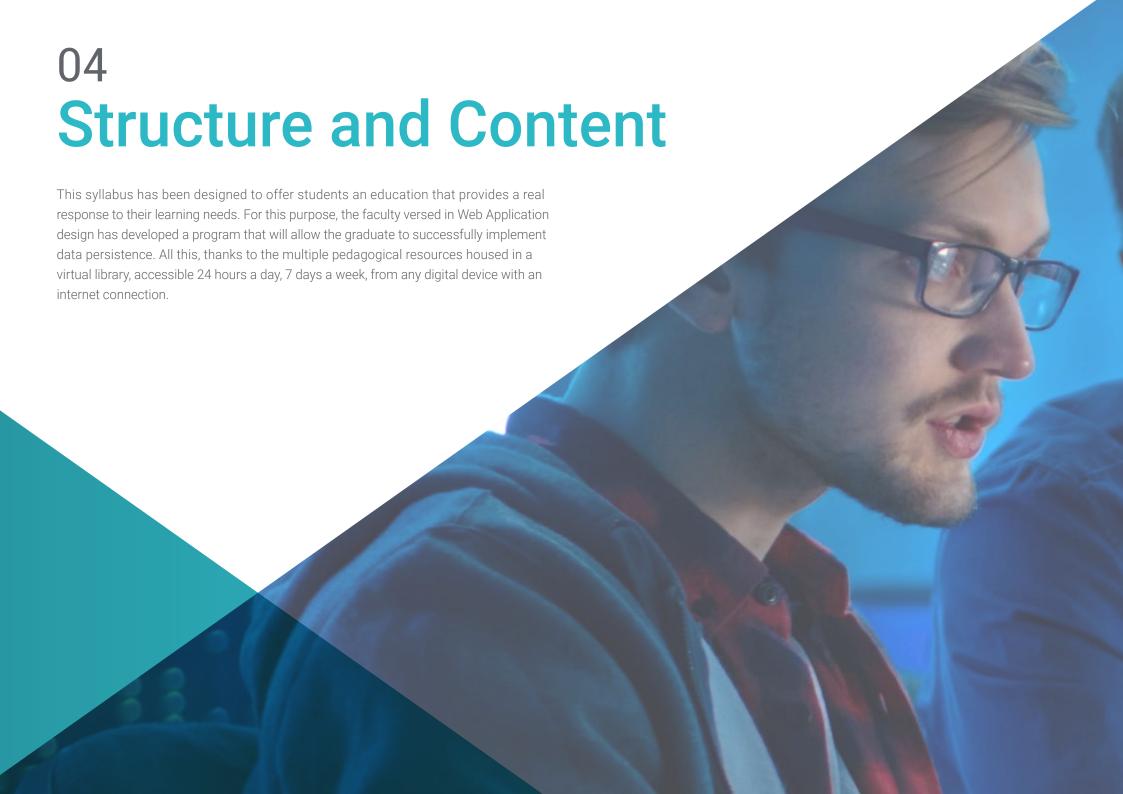
- Solutions Architect at Amazon Web Services (AWS)
- Solutions Architect at Liferay, Inc
- Technical Manager at Jungheinrich AG
- Senior Software Engineer and Team Manager at Liferay
- Project Manager at Protecmedia
- Organization and delivery of online technical webinars within the AWS Customer Proficiency Plan program
- Member of the Alumni Mentoring program at Carlos III University of Madrid, for career advice to students and recent graduates
- Graduated in Telecommunication Engineering from Carlos III University of Madrid
- PhD in Software, Systems and Computing from the Polytechnic University of Madrid
- Master's Degree in Computer Languages and Systems from the National University of Distance Education (UNED)
- Executive Data Science Specialization from Johns Hopkins University

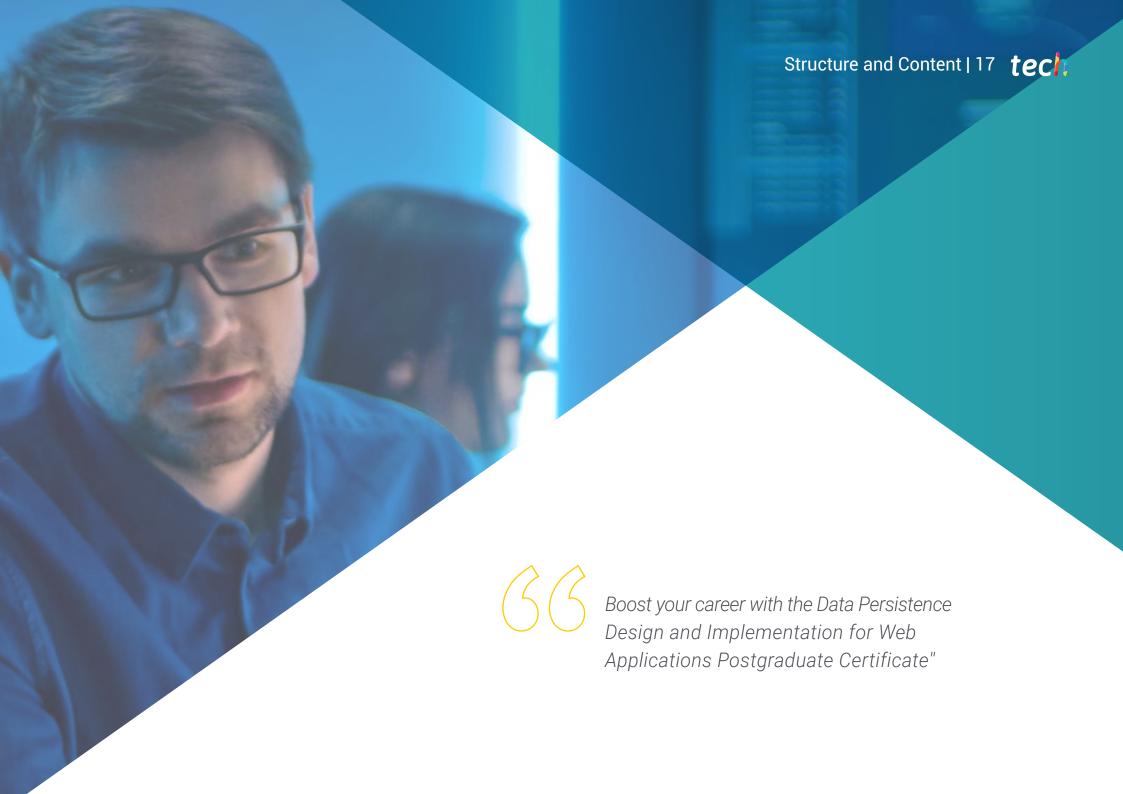
# **Professors**

# Mr. Seijo Serrao, Pablo

- Storage technician for a consultancy providing services to BBVA
- Computer Systems Technician
- Senior Computer Systems Administration Technician



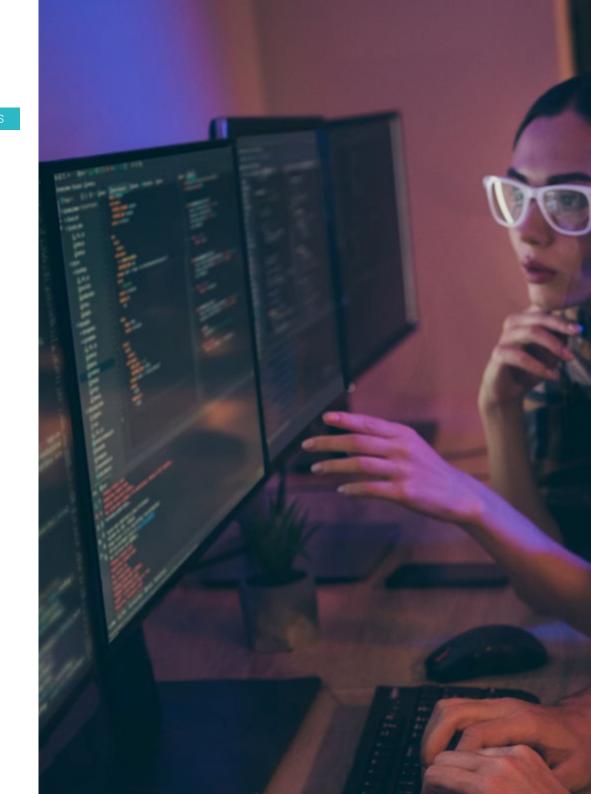


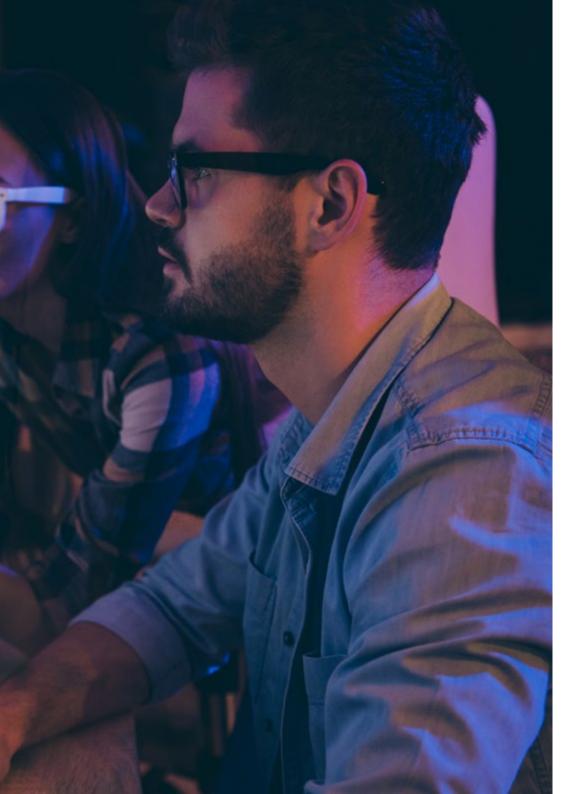


# tech 18 | Structure and Content

# **Module 1.** Data Persistence Design and Implementation for Web Applications

- 1.1. Data storage solutions
  - 1.1.1. CRUD, ACID, OLTP, OLAP
  - 1.1.2. Data Modeling
  - 1.1.3. Data storage system classifications
- 1.2. Relational Databases
  - 1.2.1. Case Uses
  - 1.2.2. Operations with Relational Databases
  - 1.2.3. Available solutions
- 1.3. Non-- Relational Databases
  - 1.3.1. Key-Value Databases
  - 1.3.2. Objects-Oriented Databases
  - 1.3.3. Graph-Oriented Databases
- 1.4. other System of databases
  - 1.4.1. Memory Database
  - 1.4.2. Time series databases
  - 1.4.3. Distributed Databases
- 1.5. File system storage
  - 1.5.1. Case Uses
  - 1.5.2. File system operations
  - 1.5.3. Available solutions
- 1.6. Data Cache Mechanisms
  - 1.6.1. Client-side Cache
  - 1.6.2. Network Caching (CDN)
  - 1.6.3. Server-side Cache
- 1.7. Search Engines
  - 1.7.1. Case Uses
  - 1.7.2. Indexing and searching
  - 1.7.3. Available solutions





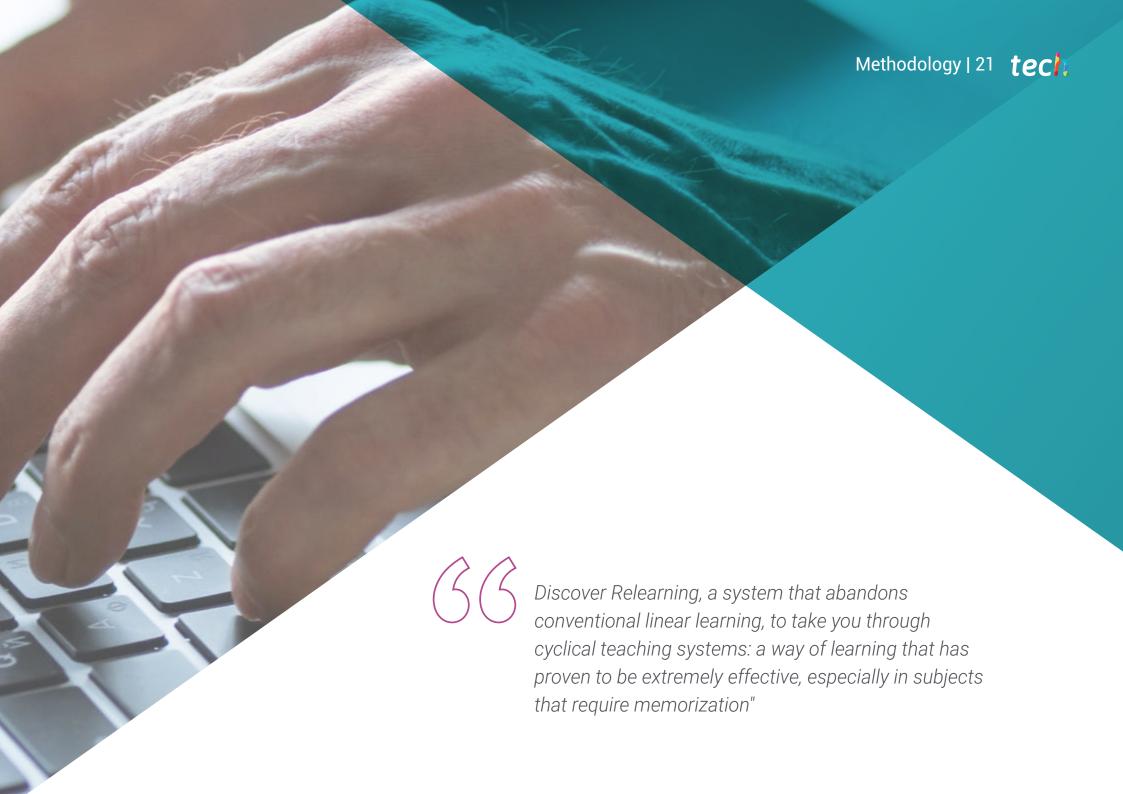
# Structure and Content | 19 tech

- 1.8. Data access mechanisms
  - 1.8.1. Data Access Object (DAO) and Data Transfer Object (DTO)
  - 1.8.2. Access Control
  - 1.8.3. Drivers
- 1.9. Big Data Architecture
  - 1.9.1. Extraction, Loading and Transformation (ETL)
  - 1.9.2. Data warehouses, data warehouses, datalakes and data lakehouses
  - 1.9.3. Available solutions
- 1.10. Criteria for storage selection
  - 1.10.1 Functional Requirements
  - 1.10.2 Non-Functional Requirements
  - 1.10.3 Other key aspects



An extensive library of high quality multimedia resources is available.
Access it easily from your computer with Internet connection"





# tech 22 | Methodology

# 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.



# Methodology | 25 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.

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.

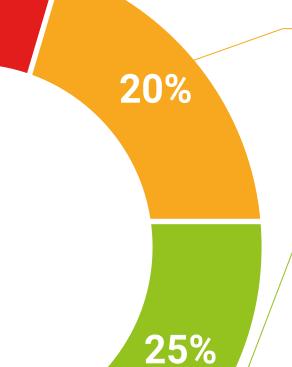


# **Additional Reading**

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.



# Methodology | 27 tech



4%

3%

# **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**

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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.





# tech 30 | Certificate

This program will allow you to obtain your **Postgraduate Certificate in Data Persistence Design** and **Implementation for Web Applications** endorsed by **TECH Global University**, the world's largest online university.

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

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

Title: Postgraduate Certificate in Data Persistence Design and Implementation for Web Applications

Modality: online

Duration: 6 weeks

Accreditation: 6 ECTS



# Postgraduate Certificate in Data Persistence Design and Implementation for Web Applications

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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

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



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# tech global university

# Postgraduate Certificate Data Persistence Design and Implementation for Web Applications

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

