

Postgraduate Certificate

Web Application Development with Artificial Intelligence



Postgraduate Certificate Web Application Development with Artificial Intelligence

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

Website: www.techtute.com/us/information-technology/postgraduate-certificate/web-application-development-artificial-intelligence

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01

Introduction

After the deployment process of websites, it is vital to perform constant monitoring and analysis to improve them. In this sense, Artificial Intelligence (AI) contributes to this task by identifying anomalies or deviations in the data. Therefore, these models can learn normal patterns of behavior and automatically alert when unusual events are detected, which facilitates the early identification of problems. In this way, computer scientists can accelerate problem resolution while avoiding reoccurrence of problems. However, this procedure faces several major challenges, so experts need to expand their knowledge frequently. To help them with this, TECH launches an online program that will optimize web building processes.



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*TECH creates a flexible and 100%
online university program to respond
to the real needs of professionals”*

Web Application Development with Machine Learning takes on great importance for organizations, as it brings numerous advantages to web applications. An example of this is that these resources serve to personalize the user experience, thus adapting to both their preferences and behavior. This results in more relevant and satisfying interactions. In addition, web programs with Artificial Intelligence are able to analyze large volumes of data and provide valuable insights for strategic decision making. This helps companies to better understand their customers, markets and even competitors.

In this context, TECH implements a Postgraduate Certificate that will provide the most advanced strategies to improve performance and security in web applications with Artificial Intelligence. The curriculum will delve into the configuration of application development environments, integrating libraries and frameworks. Likewise, the syllabus will address product design patterns, in order for graduates to improve the user experience. In relation to this, the didactic materials will focus on the creation of a project with Artificial Intelligence for LAMP environments. Therefore, the professionals will implement strategies to guarantee the optimization and maintenance of the applications.

For this learning, they will have a 100% online platform and a variety of multimedia resources. In turn, TECH's Relearning methodology will favor the development of skills and the mastery of complex concepts in a faster, more efficient and flexible way. All of this with a program that will not be subject to rigid schedules so that each graduate can choose the time and place where they will focus on this Postgraduate Certificate. The only requirement is that students have an electronic device with Internet access within their reach, in order to access the Virtual Campus and enjoy the most dynamic didactic content available in the academic market.

The **Postgraduate Certificate in Web Application Development with Artificial Intelligence** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ Development of practical cases presented by experts in Artificial Intelligence in Programming
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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



Do you want to optimize the deployment process on websites? Achieve it in just 6 weeks thanks to this revolutionary program”

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You will deepen your knowledge of product design patterns with Artificial Intelligence and bring the most innovative proposals”

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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will achieve your objectives thanks to TECH's didactic tools, including explanatory videos and interactive summaries.

You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.



02 Objectives

Through 180 hours of training, graduates will gain advanced skills to implement in their web projects. Computer scientists will implement their own Artificial Intelligence procedures to successfully address Front-end design and Back-end optimization. In addition, students will optimize website deployment processes through the most innovative strategies aimed at improving their efficiency. Moreover, students will integrate Machine Learning to cloud computing to design highly scalable web applications. This will allow them to successfully face any challenge they face during their work.





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The training includes real case studies and exercises to bring the development of the program closer to everyday computing practice”



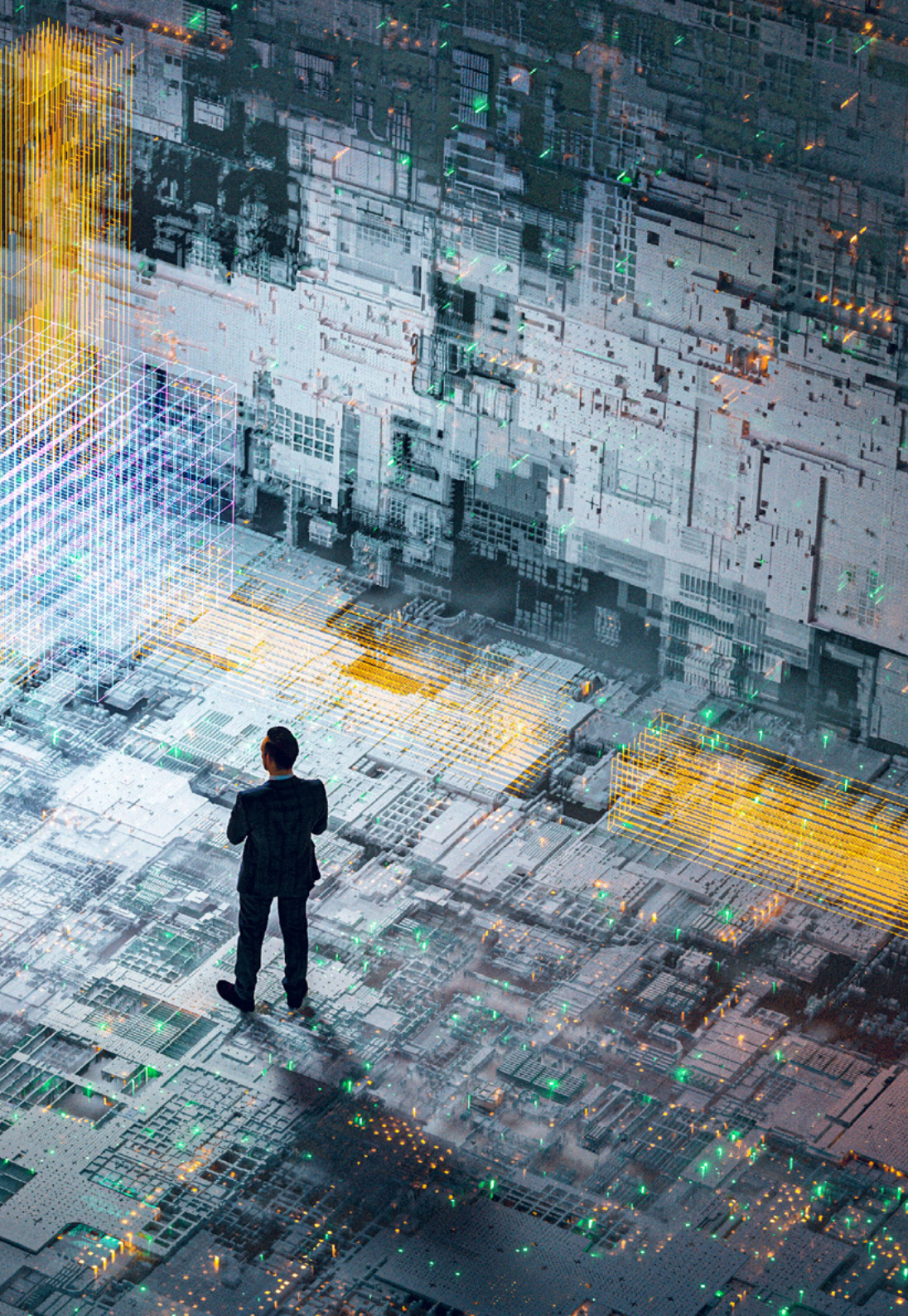
General Objectives

- ◆ Develop skills to configure and manage efficient development environments, ensuring a solid foundation for the implementation of AI projects
- ◆ Acquire skills in planning, executing and automating quality testing, incorporating AI tools for bug detection and correction
- ◆ Understand and apply performance, scalability and maintainability principles in the design of large-scale computing systems
- ◆ Become familiar with the most important design patterns and apply them effectively in software architecture



TECH's learning system follows the highest international quality standards"





Specific Objectives

- ◆ Develop comprehensive skills for the implementation of web projects, from frontend design to backend optimization, with the inclusion of AI elements
- ◆ Optimize the process of deploying websites, incorporating techniques and tools to improve speed and efficiency
- ◆ Integrate AI into cloud computing, enabling students to create highly scalable and efficient web projects
- ◆ Acquire the ability to identify specific problems and opportunities in web projects where AI can be effectively applied, such as in text processing, personalization, content recommendation, etc.
- ◆ Encourage students to keep abreast of the latest trends and advances in AI for its proper application in web projects

03

Course Management

In order to provide the highest education for all, TECH stands out for having an extensive and renowned group of experts in Web Application Development with Artificial Intelligence, which ensure an updated and functional learning that makes up this program. These professionals in charge of directing this program have a recognized work experience, which has allowed them to be part of prestigious institutions related to the IT field. All this is a guarantee for the graduate who wishes to obtain an advanced education from the best.



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You will have the support of a teaching staff made up of distinguished professionals in Web Application Development with Machine Learning”

Management



Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometheus Global Solutions
- CTO at Korporate Technologies
- CTO at AI Shepherds GmbH
- Consultant and Strategic Business Advisor at Alliance Medical
- Director of Design and Development at DocPath
- PhD. in Psychology from the University of Castilla La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University
- PhD in Psychology from University of Castilla La Mancha
- Máster in Executive MBA por la Universidad Isabel I
- Master's Degree in Sales and Marketing Management, Isabel I University
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- Member of: SMILE Research Group



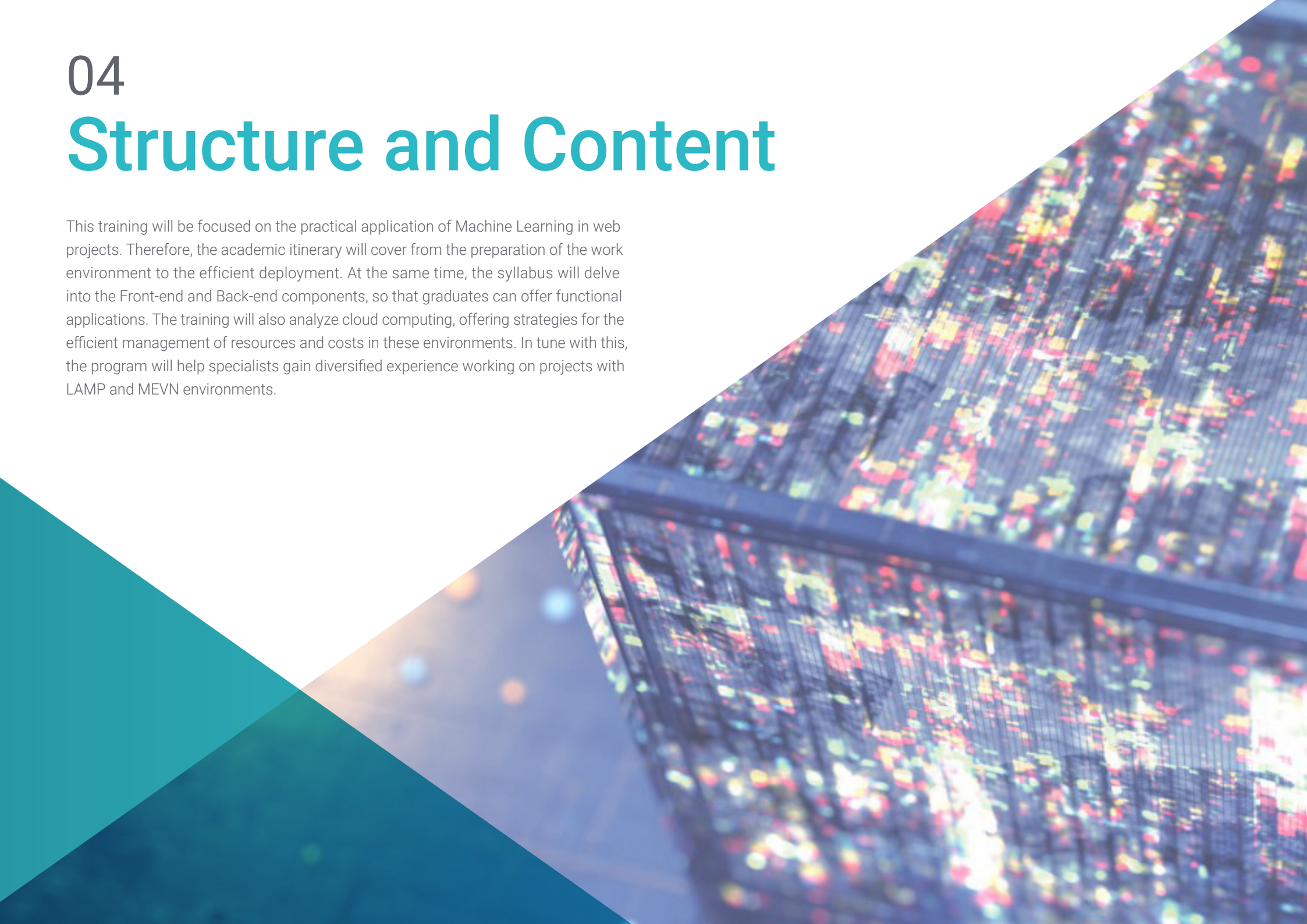
Mr. Castellanos Herreros, Ricardo

- Chief Technology Officer at OWQLO
- Specialist in Computer Systems Engineering and Machine Learning Engineer
- Freelance Technical Consultant
- Mobile Applications Developer for eDreams, Fnac, Air Europa, Bankia, Cetelem, Banco Santander, Groupón and Grupo Planeta
- Web Developer for Openbank and Banco Santander.
- Technical Engineer in Computer Systems from the University of Castilla la Mancha

04

Structure and Content

This training will be focused on the practical application of Machine Learning in web projects. Therefore, the academic itinerary will cover from the preparation of the work environment to the efficient deployment. At the same time, the syllabus will delve into the Front-end and Back-end components, so that graduates can offer functional applications. The training will also analyze cloud computing, offering strategies for the efficient management of resources and costs in these environments. In tune with this, the program will help specialists gain diversified experience working on projects with LAMP and MEVN environments.

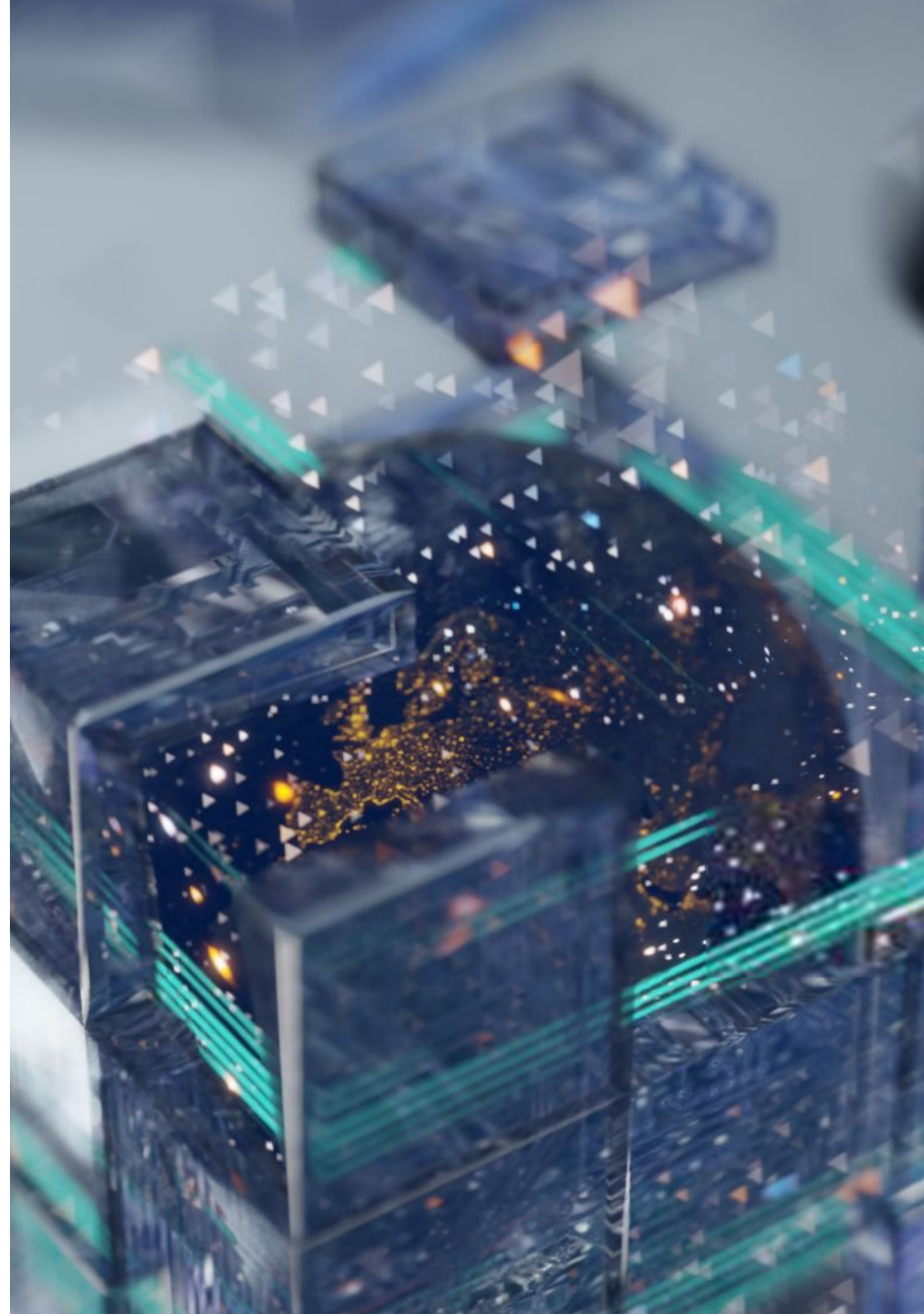


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You will apply the most advanced techniques to improve both the speed and efficiency of your websites”

Module 1. Website Projects with AI

- 1.1. Working Environment Preparation for Web Development with AI
 - 1.1.1. Configuration of Web Development Environments for Projects with Artificial Intelligence
 - 1.1.2. Selection and Preparation of Essential Tools for Web Development with AI
 - 1.1.3. Integration of Specific Libraries and Frameworks for Web Projects with Artificial Intelligence
 - 1.1.4. Implementation of Best Practices in the Configuration of Collaborative Development Environments
- 1.2. Workspace Creation for AI Projects with GitHub Copilot
 - 1.2.1. Effective Design and Organization of Workspaces for Web Projects with Artificial Intelligence Components
 - 1.2.2. Use of Project Management and Version Control Tools in the Workspace
 - 1.2.3. Strategies for Efficient Collaboration and Communication in the Development Team
 - 1.2.4. Adaptation of the Workspace to the Specific Needs of AI Web Projects
- 1.3. Design Patterns in Github Copilot Products
 - 1.3.1. Identification and Application of Common Design Patterns in User Interfaces with Artificial Intelligence Elements
 - 1.3.2. Development of Specific Patterns to Improve the User Experience in AI Web Projects
 - 1.3.3. Integration of Design Patterns in the Overall Architecture of Web Projects with Artificial Intelligence
 - 1.3.4. Evaluation and Selection of Appropriate Design Patterns According to the Project's Context
- 1.4. Frontend Development with GitHub Copilot
 - 1.4.1. Integration of AI Models in the Presentation Layer of Web Projects
 - 1.4.2. Development of Adaptive User Interfaces with Artificial Intelligence Elements
 - 1.4.3. Implementation of Natural Language Processing (NLP) Functionalities in Front-end Development
 - 1.4.4. Strategies for Performance Optimization in Front-end Development with AI



- 1.5. Database Creation using GitHub Copilot
 - 1.5.1. Selection of Database Technologies for Web Projects with Artificial Intelligence
 - 1.5.2. Design of Database Schemas for Storing and Managing AI-Related Data
 - 1.5.3. Implementation of Efficient Storage Systems for Large Volumes of Data Generated by AI Models
 - 1.5.4. Strategies for Security and Protection of Sensitive Data in AI Web Project Databases
- 1.6. Back-End Development with GitHub Copilot
 - 1.6.1. Integration of AI Services and Models in the Back-End Business Logic
 - 1.6.2. Development of Specific APIs and Endpoints for Communication between Front-End and AI Components
 - 1.6.3. Implementation of Data Processing and Decision-Making Logic in the Backend with Artificial Intelligence
 - 1.6.4. Strategies for Scalability and Performance in Back-End Development of Web Projects with AI
- 1.7. Optimization of the Deployment Process of Your Website
 - 1.7.1. Automation of Web Project Build and Deployment Processes with ChatGPT
 - 1.7.2. Implementing CI/CD Pipelines Tailored to Web Applications with Github Copilot
 - 1.7.3. Strategies for Efficient Release and Upgrade Management in Continuous Deployments
 - 1.7.4. Post-Deployment Monitoring and Analysis for Continuous Process Improvement
- 1.8. AI in Cloud Computing
 - 1.8.1. Integration of Artificial Intelligence Services in Cloud Computing Platforms
 - 1.8.2. Development of Scalable and Distributed Solutions using Cloud Services with AI Capabilities
 - 1.8.3. Strategies for Efficient Resource and Cost Management in Cloud Environments with AI-enabled Web Applications
 - 1.8.4. Evaluation and Comparison of Cloud Service Providers for AI-enabled Web Projects
- 1.9. Creating an AI Project for LAMP Environments with the Help of ChatGPT
 - 1.9.1. Adaptation of Web Projects Based on the LAMP Stack to Include Artificial Intelligence Components
 - 1.9.2. Integration of AI-specific Libraries and Frameworks in LAMP Environments
 - 1.9.3. Development of AI Functionalities that Complement the Traditional LAMP Architecture
 - 1.9.4. Strategies for Optimization and Maintenance in Web Projects with AI in LAMP Environments
- 1.10. Creating an AI Project for MEVN Environments Using ChatGPT
 - 1.10.1. Integration of MEVN Stack Technologies and Tools with Artificial Intelligence Components
 - 1.10.2. Development of Modern and Scalable Web Applications in MEVN Environments with AI Capabilities
 - 1.10.3. Implementation of Data Processing and Machine Learning Functionalities in MEVN Projects
 - 1.10.4. Strategies for Performance and Security Enhancement of AI-enabled Web Applications in MEVN Environments



Acquire knowledge without geographical limitations or pre-established timing"

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.



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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.



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 Certificate in Web Application Development with Artificial Intelligence guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This private qualification will allow you to obtain a **Postgraduate Certificate in Web Application Development with Artificial Intelligence** 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** private qualification 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 Web Application Development with Artificial Intelligence**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



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