Postgraduate Certificate
Advanced Front-End Web Architecture and Development

tech *global university*

Postgraduate Certificate
Advanced Front-End Web Architecture and Development

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

Website: **www.techtitute.com/us/information-technology/postgraduate-certificate/advanced-front-end-web-architecture-development**

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01
Introduction

By adopting advanced approaches to frontend design and structure, developers can improve the user experience by optimizing the loading speed, interactivity and responsiveness of applications. In addition, implementing a robust, well-planned architecture facilitates scalability and long-term code maintenance and, by leveraging advanced technologies and tools, such as frameworks, APIs and agile development methodologies, organizations can deliver high quality web products. In this context, TECH has conceived a comprehensive 100% online program, supported by the innovative Relearning methodology, a disruptive approach that considerably minimizes the time required for long study and memorization sessions.
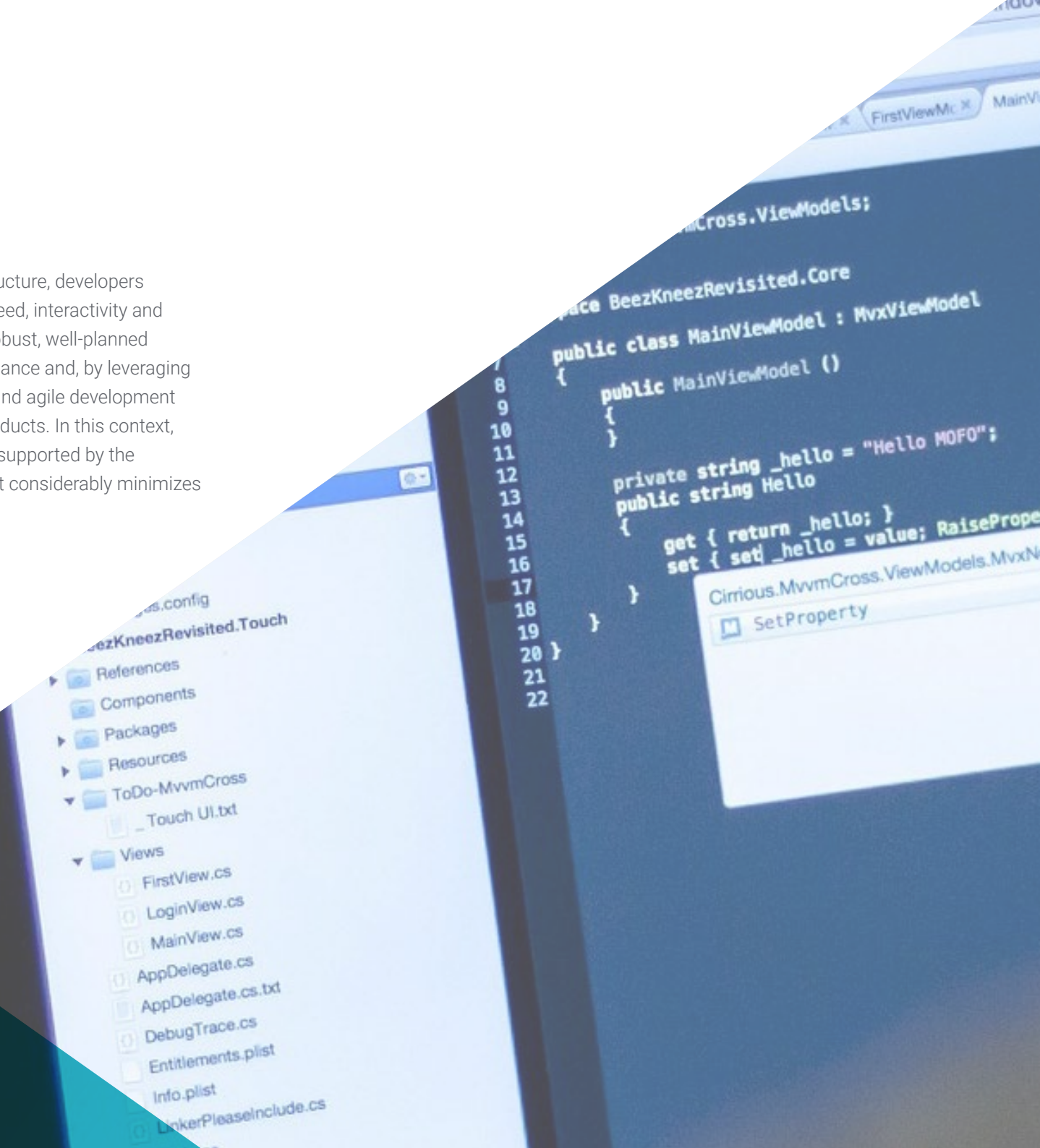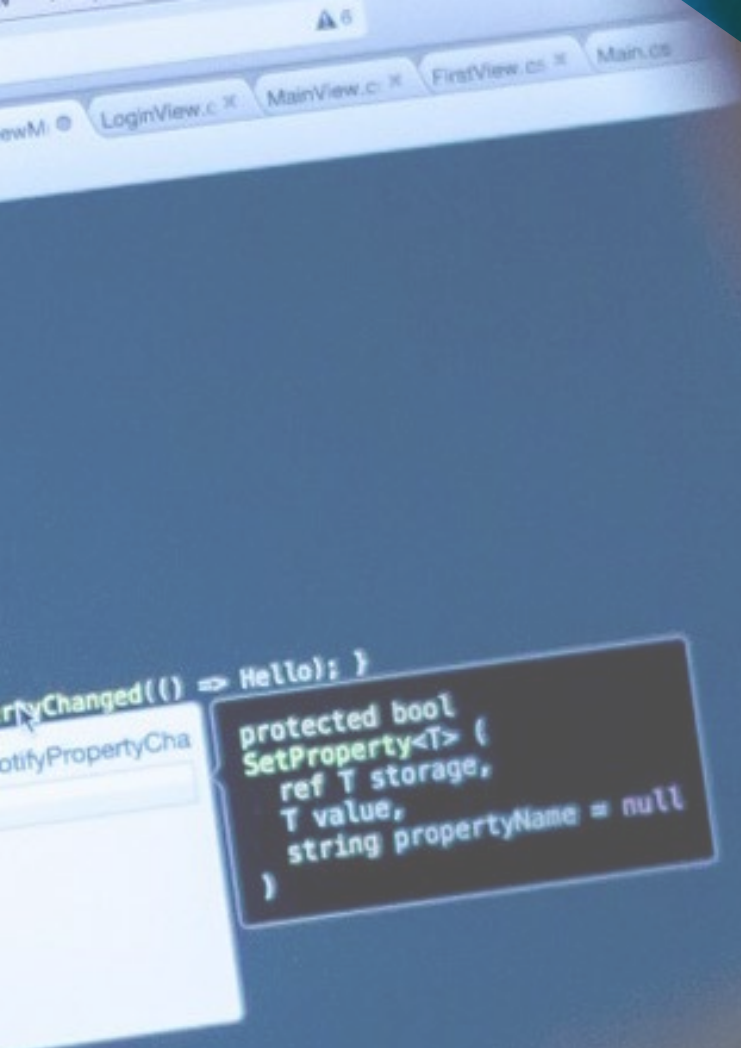
Thanks to this 100% online Postgraduate Certificate, you will acquire the necessary skills to create efficient, secure and high performance frontend web applications"

Advanced Front-End Web Architecture and Development provides a superior user experience by ensuring an intuitive, accessible and highly interactive design. In addition, it optimizes website performance by implementing advanced asynchronous loading techniques and resource optimization. This discipline also promotes modularity and code reuse, which facilitates the scalability and long-term maintenance of web applications.

This is how this complete Postgraduate Certificate was created, designed to provide computer scientists with a comprehensive and practical understanding of advanced strategies and techniques in front-end architecture. In this way, they will master the fundamental principles of frontend architecture, as well as how to analyze and apply advanced state management in web applications. Key topics such as performance optimization and security will also be explored.

In addition, a key part of the program will focus on performance optimization in frontend applications, identifying and addressing bottlenecks to improve website speed and efficiency. In addition, the importance of ensuring security policies on the frontend will be emphasized, covering crucial aspects such as protection against security attacks and the implementation of effective security measures.

Finally, the program will be dedicated to compiling testing techniques and tools, enabling professionals to perform thorough testing and ensure the quality and reliability of their applications. Likewise, emerging architectures such as micro frontends and event-driven architectures will be analyzed, providing graduates with an advanced understanding of current trends in frontend web development.

In this way, TECH has launched a completely virtual and highly adaptable academic certification, in which students will only need an electronic device with an Internet connection to access all available teaching materials.

Additionally, it will be based on the innovative of Relearning methodology, consisting of the repetition of essential concepts to guarantee an optimal and organic assimilation of the contents.

This **Postgraduate Certificate in Advanced Front-End Web Architecture and Development** contains the most complete and up-to-date educational program on the market. The most important features include:

- The development of practical cases presented by experts in Advanced Front-End Web Architecture and Development

- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the 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 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

Advanced Front-End Web Architecture and Development are fundamental to creating innovative and competitive web applications that provide an exceptional user experience. Enroll now!"

"You will master testing techniques and tools to ensure the quality and reliability of frontend code, thanks to an extensive library of innovative multimedia resources"

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 prepare for 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, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will cover crucial topics such as state management, performance optimization and security in web applications, all through the best teaching materials, at the forefront of technology and education.

You will analyze in detail advanced state management techniques in front-end applications, as well as performance optimization strategies. Take advantage of this unique opportunity that only TECH offers you!
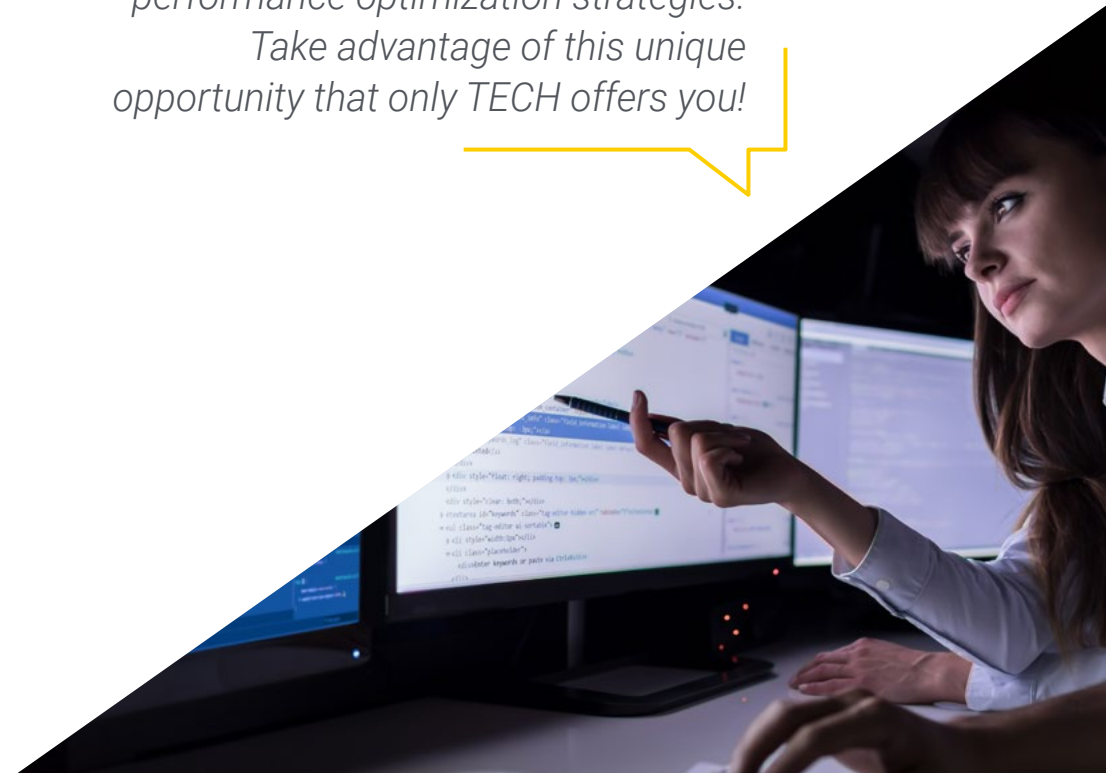
02
Objectives

The objectives of this Postgraduate Certificate are designed to provide professionals with a deep and practical understanding of the fundamental principles and advanced techniques in front-end development. As such, this program's main objective is to train computer scientists in the effective application of front-end architecture strategies, including state management, performance optimization and the implementation of robust security policies. Therefore, through a combination of theory and practice, graduates will acquire solid skills in the design and construction of modern, efficient and secure web applications.

You will be specialized in the application of advanced strategies and techniques in front-end architecture, including state management, performance optimization and security policy implementation"

General Objectives

- Facilitate hands-on learning of advanced strategies and techniques in front-end architecture, including state management, performance optimization and security

You will be able to face real-world challenges in front-end web development with confidence and competence. What are you waiting for to enroll?"

Specific Objectives

- Master the principles of front-end architecture
- Analyze advanced state management in front-end applications
- Examine performance optimization in front-end applications
- Ensure front-end security policies
- Compile testing techniques and tools
- Explore micro front-end architectures and event-driven architectures

03
Course Management

The teaching staff behind this Postgraduate Certificate is made up of highly qualified and experienced experts in the field of web development. In fact, these professionals have a deep knowledge of advanced strategies and techniques in front-end architecture, as well as extensive practical experience in the industry. In addition, they are committed to academic excellence and the comprehensive training of graduates, providing dynamic and up-to-date teaching that incorporates the latest advances and trends in web development.

The faculty will not only provide you with solid theoretical instruction, but will also help you develop skills that are applicable and relevant to today's working world"

Management

### Mr. Utrilla Utrilla, Rubén

- Technology Project Manager at Serquo
- Fullstack Developer at ESSP
- Junior Fullstack Developer at Sinis Technology S.L
- Junior Fullstack Developer at Escuela Politécnica Cantoblanco Campus
- Master in AI and Innovation by Founderz
- Degree in Computer Engineering from the Autonomous University of Madrid
- Google Cloud Developer course in Google Academic Program

Professors

Ms. Zayat Mata, Ana

- Software Development Team Leader at Taric SAU
- Software Developer at Taric SAU
- Master's Degree in Computer Engineering from the Autonomous University of Madrid
- Degree in Computer Engineering from the Autonomous University of Madrid
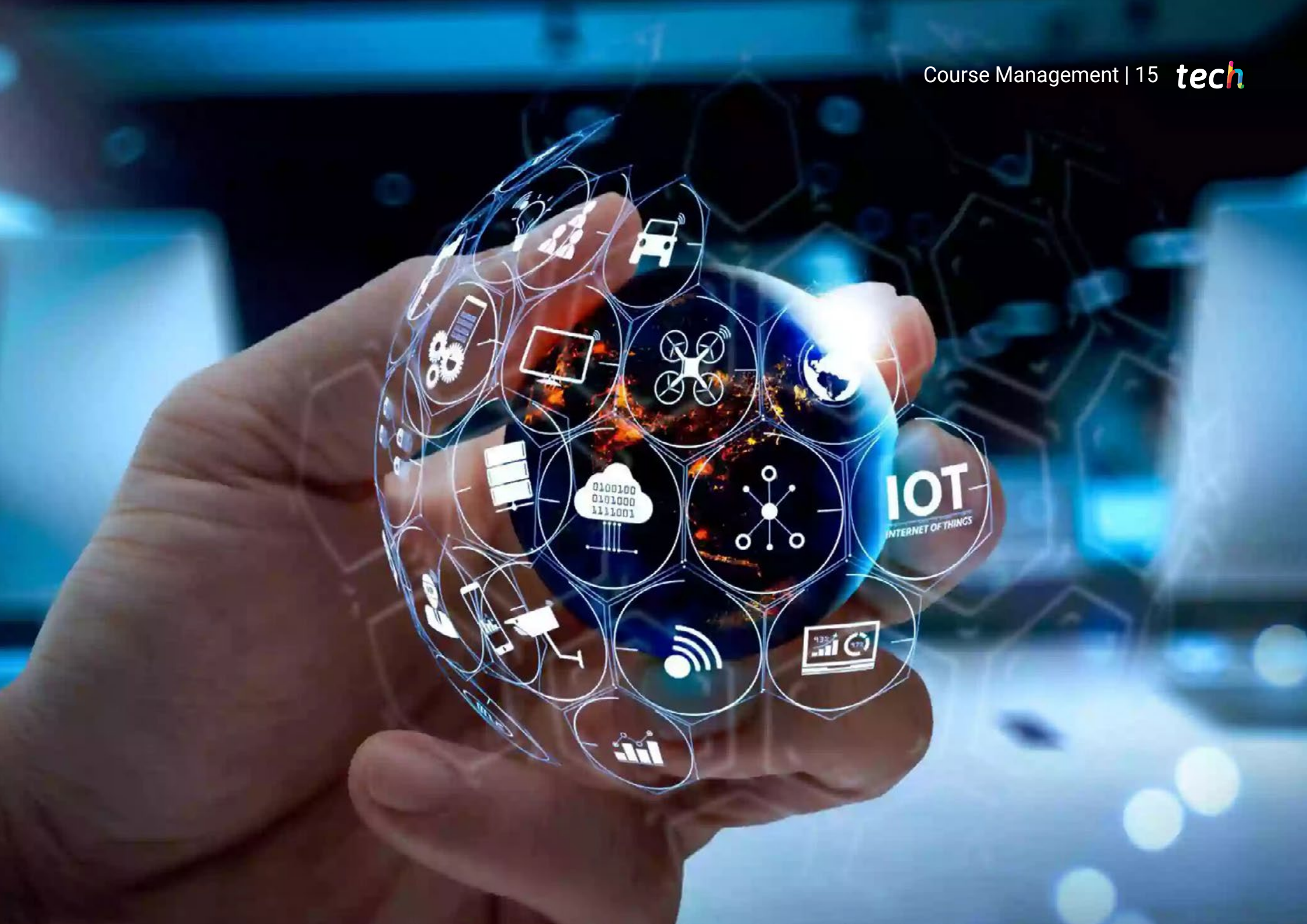
Structure and Content

The content will cover a variety of fundamental and advanced topics necessary to build modern, highly functional web applications. From mastering the essential principles of frontend architecture, to the analysis and implementation of advanced state, performance and security management techniques, this academic program will provide a comprehensive overview of the web development landscape. Professionals will explore strategies for optimizing the performance of front-end applications, ensuring effective security policies and understanding the the importance of testing in code quality.

You will delve into current trends and the tools needed to meet the challenges of front-end web development with confidence and competence. Bet on TECH!"

Module 1. Advanced Front-End Web Architecture and Development

1.1.   Advanced Front-End Architecture
    1.1.1.   Separation of Concerns
    1.1.2.   Design and Architectural Patterns
    1.1.3.   MVC, MVP, MVVM
    1.1.4.   Singleton, Factory, Observer
    1.1.5.   Functional Patterns
    1.1.6.   Modularity and Componentization

1.2.   State Management in Frontend
    1.2.1.   State Management Strategies
    1.2.2.   Libraries and Frameworks
    1.2.3.   Patterns and Best Practices

1.3.   Performance Optimization in Front-End Web Development
    1.3.1.   Deferred Loading and Resource Optimization
    1.3.2.   Performance Analysis Tools (Profiling)
    1.3.3.   Caching and Service Worker Strategies
    1.3.4.   Caching

1.4.   Security in Front-End Web Development
    1.4.1.   Preventing XSS and CSRF Attacks
    1.4.2.   Secure Authentication and Session Handling
    1.4.3.   CSP Implementation

1.5.   Testing and Code Quality in Front-End Web Development
    1.5.1.   Automated Testing (Unit, Integration, E2E)
    1.5.2.   Code Analysis Tools
    1.5.3.   Refactoring Strategies
    1.5.4.   Continuous Integration and Continuous Delivery (CI/CD)

1.6.   Micro Frontends
    1.6.1.   Architecture
    1.6.2.   Communication between Micro Frontends
    1.6.3.   Deployment and Versioning

They will address emerging architectures, such as micro frontends and event-based architectures, always under the revolutionary Relearning methodology, focused on the reiteration of key concepts to assimilate the contents"

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.
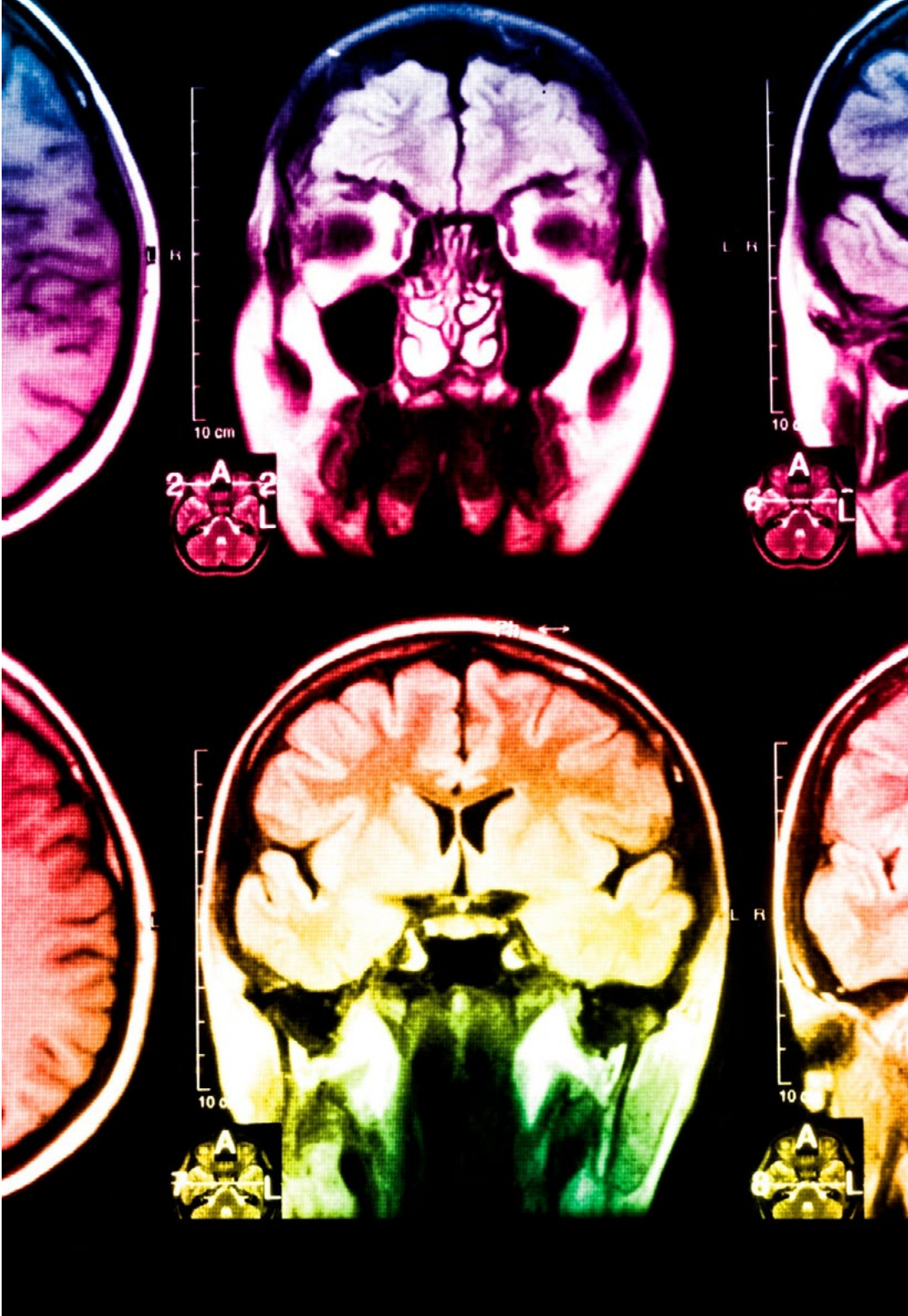
This program offers the best educational material, prepared with professionals in mind:

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.

30%

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.

10%

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.

8%

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.

20%

25%

4%

3%
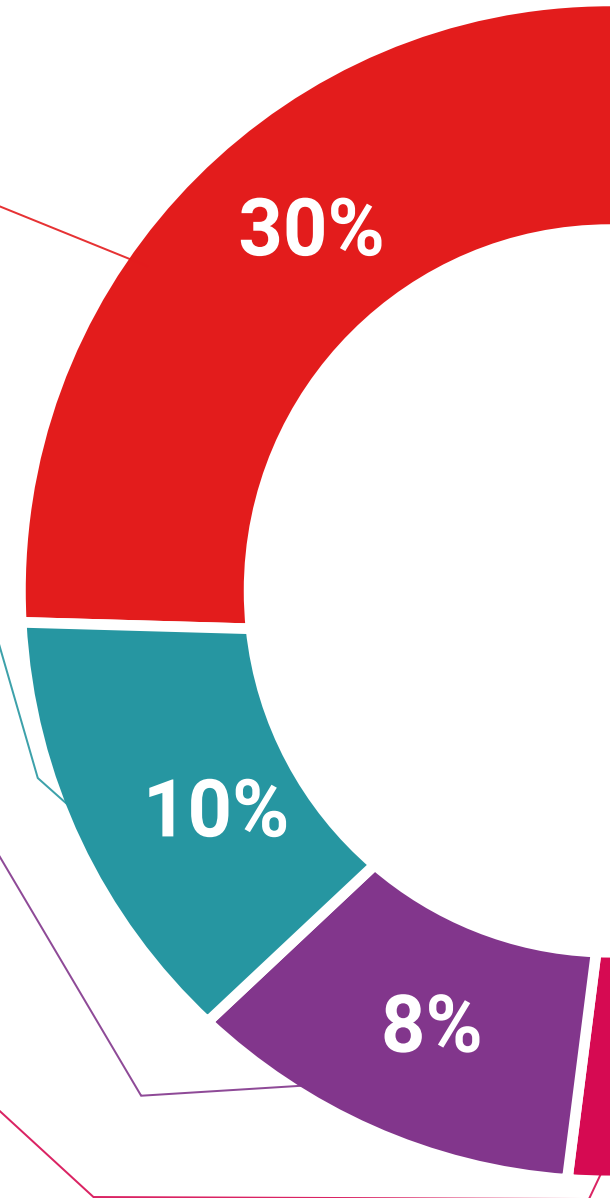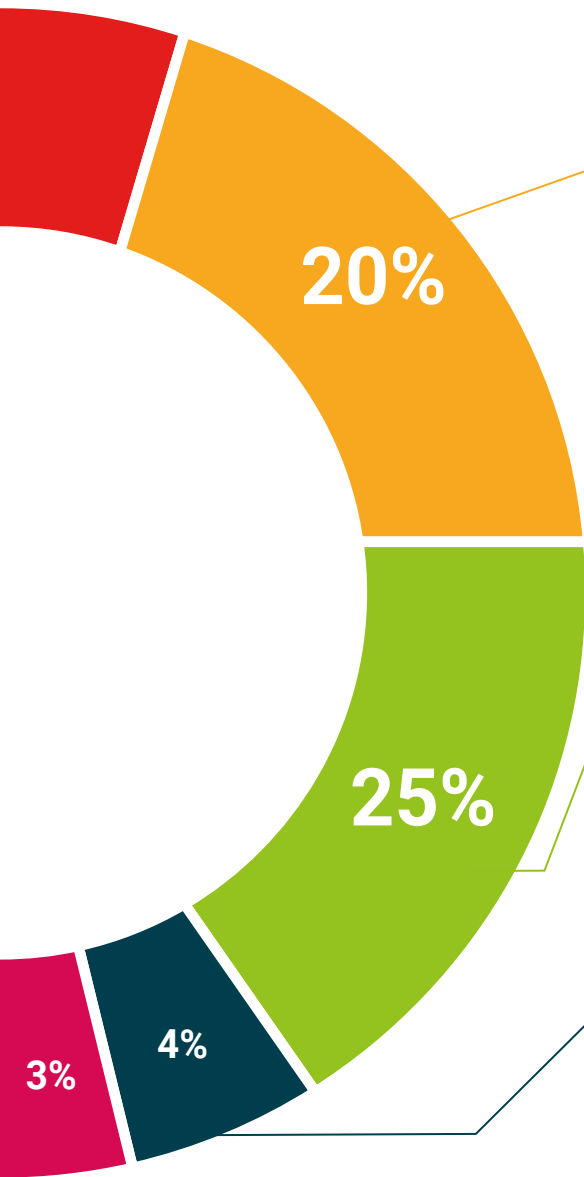
Case Studies

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

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 Advanced Front-End Web Architecture and Development guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.

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 Advanced Front-End Web Architecture and Development** 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 Advanced Front-End Web Architecture and Development**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

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tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Certificate in Advanced Front-End Web Architecture and Development

This is a private qualification 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

Dr. Pedro Navarro Illana
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

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*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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