Postgraduate Diploma
Architecture in Front-End Web Development

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Postgraduate Diploma
Architecture in Front-End Web Development

- » Modality: **online**
- » Duration: **6 months**
- » Certificate: **TECH Global University**
- » Credits: **18 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

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

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01

Introduction

By following well-defined architectural practices, front-end web developers can achieve a modular and scalable structure that facilitates collaboration across large teams, enables component reuse and promotes code maintainability. In addition, a well-designed front-end architecture can improve page load speed, accessibility and user experience, resulting in web applications that are more agile, user-friendly and adaptable to a variety of devices and browsing environments. In this way, TECH has conceived a comprehensive, fully online program, based on the innovative Relearning methodology. This revolutionary approach to the learning process considerably reduces the time dedicated to long study sessions and memorization.

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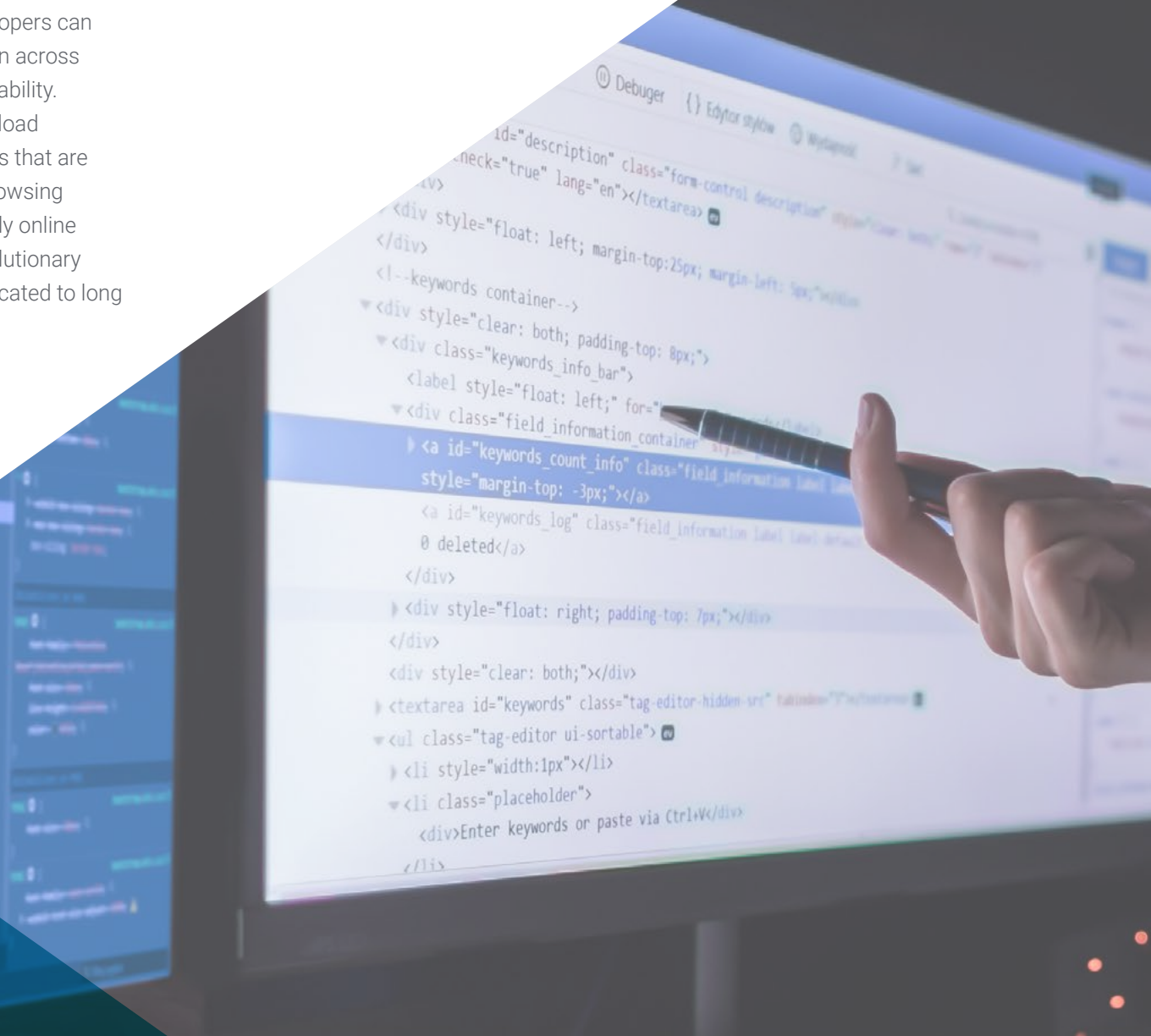
"Through this 100% online Postgraduate Diploma, you will acquire advanced skills in code organization and modularization, creating scalable and maintainable web applications"

By establishing a well-defined front-end architecture, developers can modularize code, facilitating collaboration and long-term maintenance. It also allows for better code organization, resulting in more scalable and adaptable development as projects grow and evolve.

This is how this Postgraduate Diploma was created, which will offer a thorough exploration of the fundamental principles that govern front-end architecture. As a result, computer scientists will master the organization and modularization of code to create scalable and easy-to-maintain web applications. In addition, they will delve into the analysis of advanced state management in frontend applications, effectively applying techniques to handle complex data and state in their projects.

It will also focus on performance optimization in front-end applications and the implementation of robust security policies. In this way, professionals will be able to identify and address performance bottlenecks, as well as implement effective security measures to protect data integrity and confidentiality. To this must be added testing techniques and tools to ensure the quality and reliability of the developed software.

Finally, the program will cover the creation of attractive and accessible design systems, integrating web accessibility principles from the initial design. Graduates will also develop accessible multimedia content, ensuring accessibility in Single Page Applications (SPA) and Progressive Web Apps (PWA). They will also keep up to date with relevant legislation and accessibility regulations.

Innovatively, TECH has designed this academic program completely online, with total flexibility, which means that students will only need an electronic device with an Internet connection to access all materials. In addition, they will be able to take full advantage of the revolutionary Relearning methodology, which focuses on the repetition of key concepts for a deep and natural understanding of the content.

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

- The development of practical cases presented by experts in Architecture in Front-End Web Development
- The graphic, schematic, and practical content 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

Architecture in Front-End Web Development will provide you with a solid foundation for building digital experiences that are stable, scalable and easy to maintain over time. What are you waiting for to enroll?"

From integrating accessibility principles into the initial design, to implementing accessible multimedia content techniques, you'll comply with accessibility regulations and legislation"

You will master the principles of front-end architecture, organizing and modularizing the code effectively to create scalable and maintainable applications.

You will examine code optimization strategies, asynchronous resource loading and caching techniques to ensure a smooth and responsive user experience. Bet on TECH!
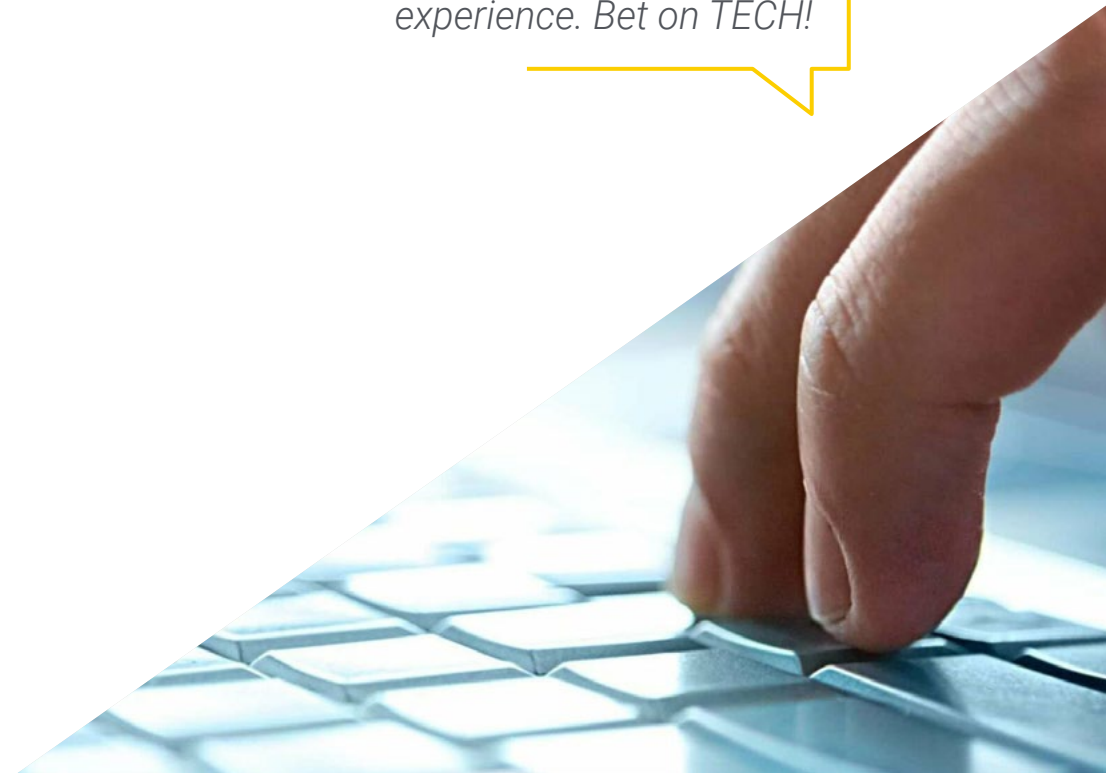
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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

02
Objectives

The main objective of this Postgraduate Diploma is to provide computer scientists with a deep and updated understanding of the fundamental principles, techniques and tools in the design and development of modern and efficient web interfaces.

Therefore, throughout the program, professionals will master the essential concepts of frontend architecture, including modular code organization and performance optimization. In addition, they will analyze effective security policies and the integration of web accessibility practices, ensuring the creation of inclusive and secure web interfaces for a wide range of users.

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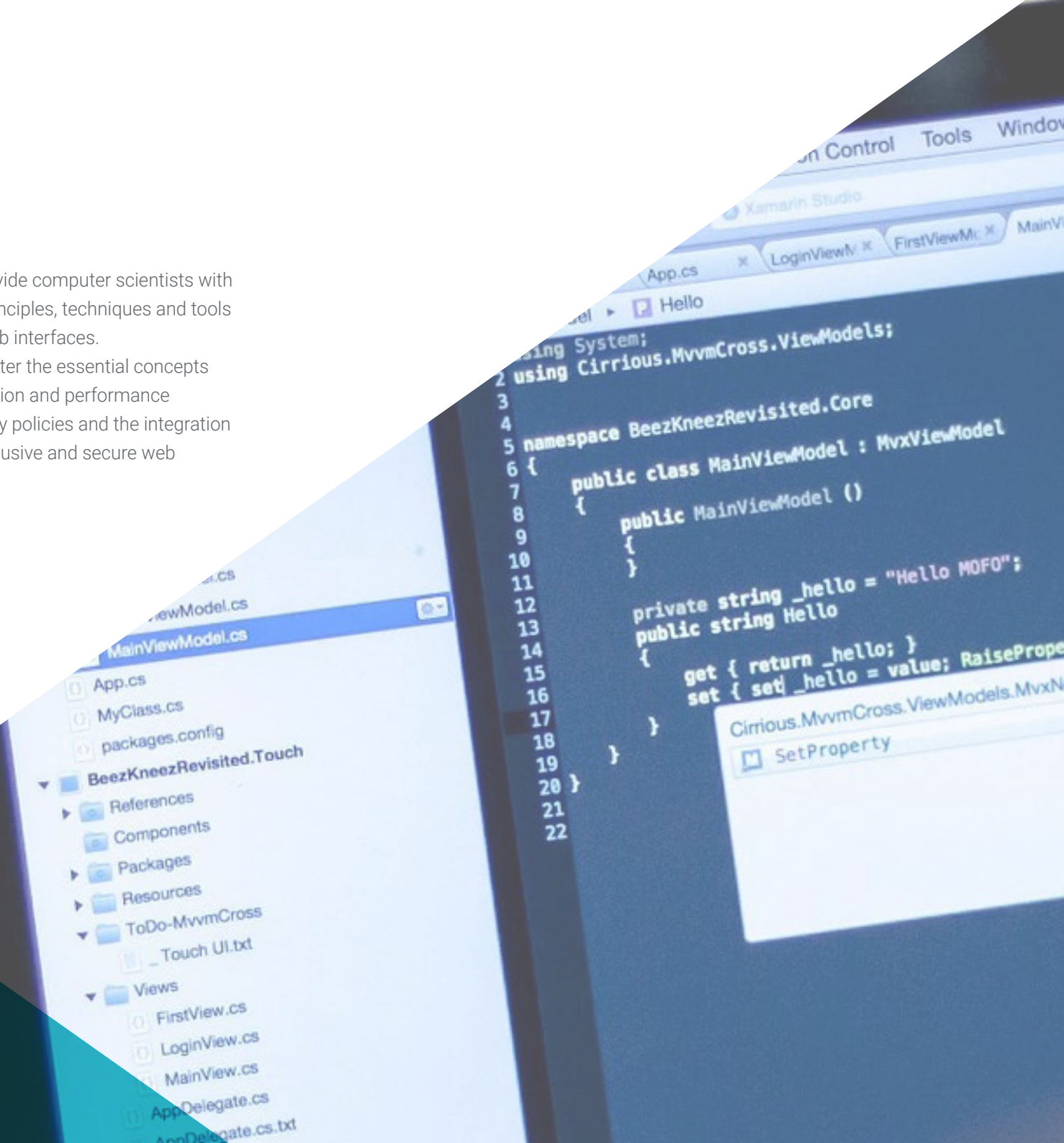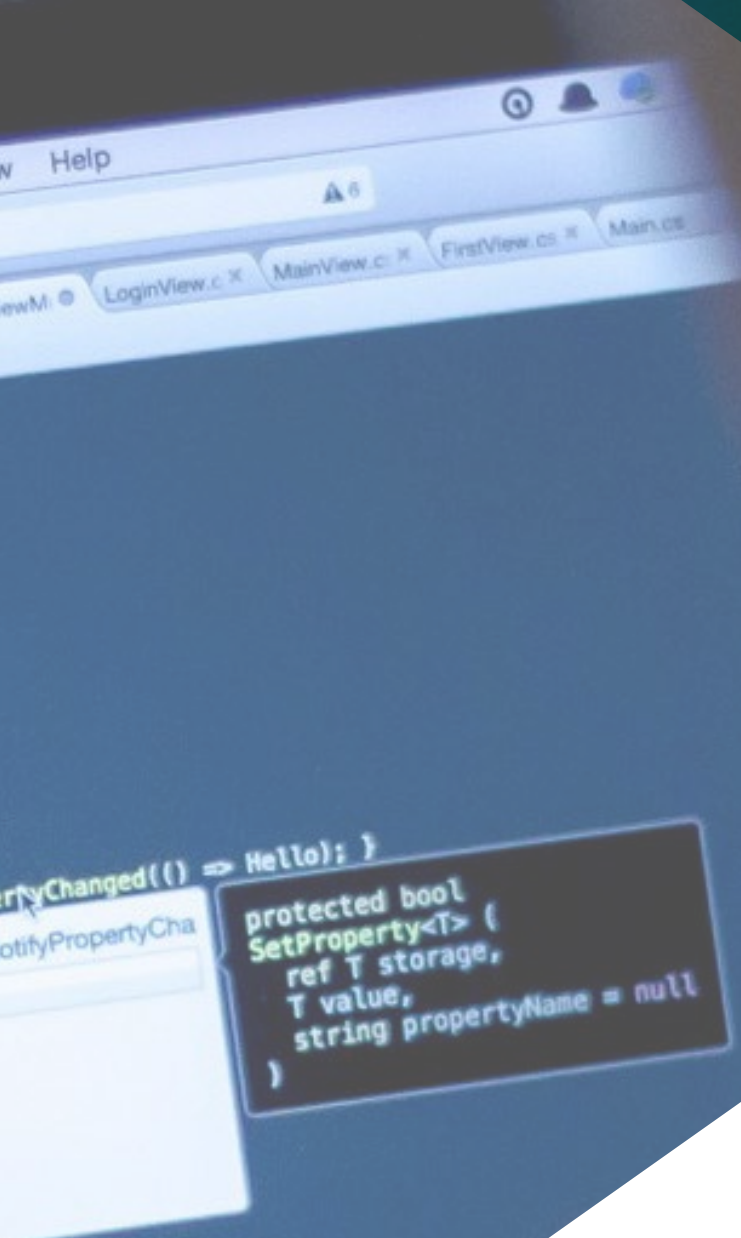
The Postgraduate Diploma in Architecture in Front-End Web Development aims to equip professionals with the skills and knowledge necessary to excel in this competitive field"

General Objectives

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

- Develop a comprehensive knowledge of CSS architecture, including understanding and application of advanced methodologies for structuring the code efficiently

- Apply best practices and standards (such as WCAG and ARIA) in their projects, ensuring that applications are accessible to all users

- Develop specialized knowledge of WCAG and ARIA, as well as testing and validation strategies, to ensure that applications comply with legal and ethical web accessibility standards

You will design and develop robust, secure and accessible online front-end web experiences, with the latest industry trends and standards and with all TECH's quality guarantees"

Specific Objectives

Module 1. Advanced Front-End Web Architecture and Development

- 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

Module 2. CSS Architecture, Preprocessors and Front-End Interface Design and User Experience

- Master CSS methodologies
- Implement modern CSS and layouts
- Create animations and microinteractions
- Select and customize CSS frameworks
- Ensure web accessibility
- Develop design systems that appeal to users

Module 3. Internationalization and Front-End Web Accessibility

- Implement effective localization and globalization strategies
- Integrate web accessibility principles from the initial design stage
- Use tools and frameworks to facilitate i18n
- Develop accessible multimedia content techniques
- Ensure accessibility in SPAs and PWAs
- Keep up to date with accessibility legislation and regulations

03
Course Management

The teachers of this program are highly qualified and experienced experts in the field of web development. In fact, their pedagogical approach is centered on providing graduates with quality knowledge, based on the latest advances and trends in front-end technology. With a constant commitment to excellence and innovation, these mentors will inspire and motivate students to reach their full potential and become leaders in the field of web development.

"

The teaching team has been carefully selected by TECH, taking into account their vast theoretical and practical knowledge. These professionals will bring a unique combination of academic and industry experience"

Management

Mr. Utrilla Utrilla, Rubén

- Technology Project Manager at Serquo
- Full-Stack Developer at ESSP
- Junior Full-stack Developer at Sinis Technology S.L.
- Junior Full-stack Developer at Escuela Politécnica Cantoblanco Campus
- Master in AI and Innovation by Founderz
- Degree in Computer Engineering from Universidad Autónoma de Madrid
- Google Cloud Developer course in Google Academic Program

Professors

Ms. Jiménez Monar, Angélica Liceth

- Software Developer at Serquo
- Technical Support Specialist at Tecnocom
- Degree in IA Computer Engineering from Universidad Autónoma de Madrid
- Superior Degree in Networked Computer Systems Administration

Ms. Zayat Mata, Ana

- Software Development Team Leader at Taric SAU
- Software Developer at Taric SAU
- Master's Degree in Computer Engineering from Universidad Autónoma de Madrid
- Degree in Computer Engineering from Universidad Autónoma de Madrid
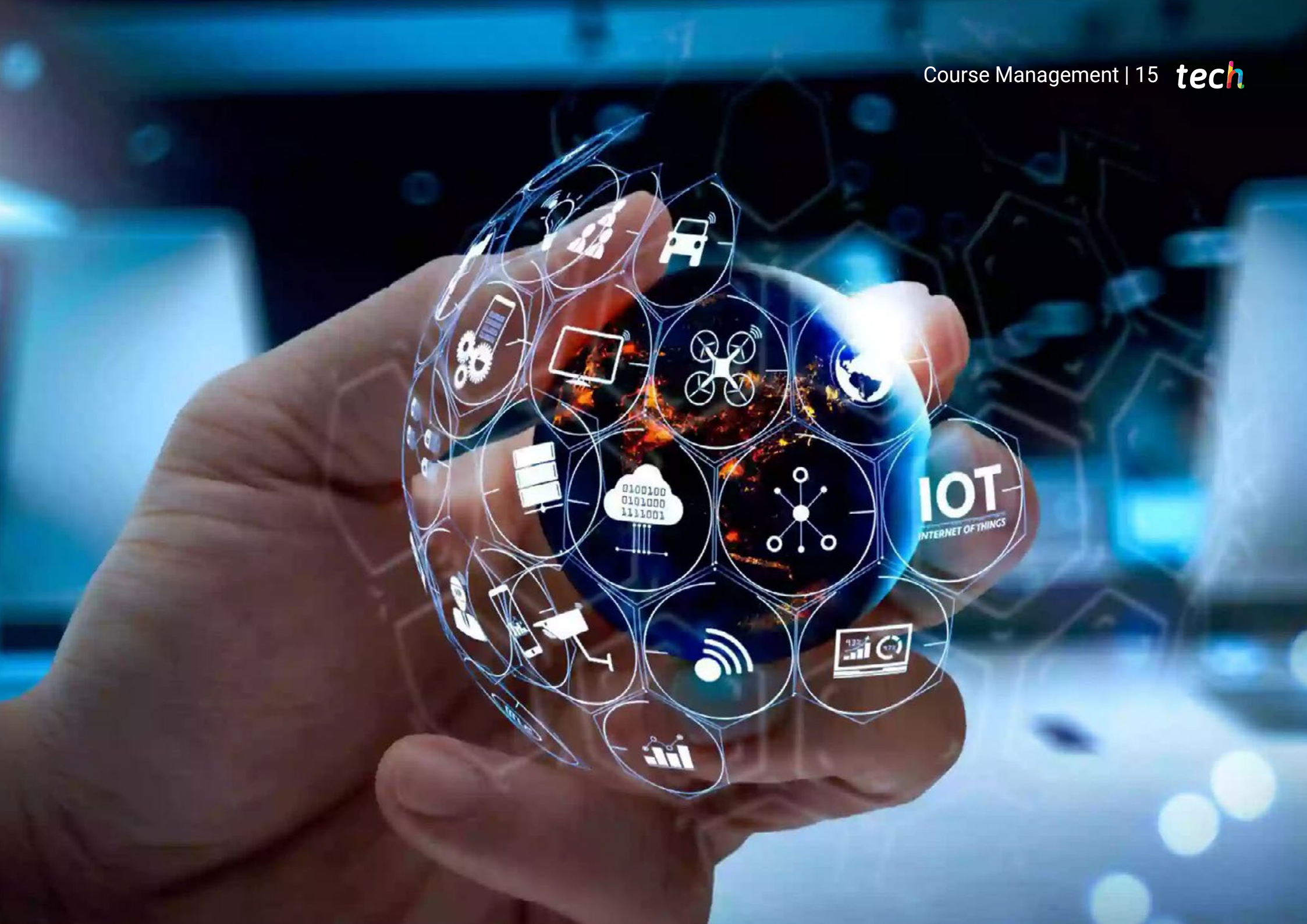
Structure and Content

The contents of this Postgraduate Diploma have been designed to provide professionals with a comprehensive and up-to-date understanding of the fundamental principles, techniques and tools in the field of front-end web development. Therefore, computer scientists will explore key topics such as front-end architecture, analyzing advanced state management in applications and examining performance optimization. In addition, crucial aspects of frontend security will be addressed, as well as the implementation of effective security policies.

You will master CSS methodologies, implementing modern CSS and layouts, creating animations and microinteractions, selecting and customizing CSS frameworks, and ensuring web accessibility"

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 Front End

    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 Front Ends

    1.6.1.   Architecture

    1.6.2.   Communication between Micro Front Ends

    1.6.3.   Deployment and Versioning

Module 2. CSS Architecture, Preprocessors and Front-End Interface Design and User Experience

2.4.   Animations and Microinteractions in Front-End Web Development

    2.4.1.   CSS Animations and Transitions

    2.4.2.   JavaScript Libraries for Complex Animations

    2.4.3.   Impact on User Experience

2.5.   Cascading Style Sheets (CSS) Frameworks in Front-End Web Development

    2.5.1.   Bootstrap, Tailwind, Materialize

    2.5.2.   Customization and Optimization

    2.5.3.   Appropriate Choice according to the Project

2.6.   Accessibility in Front-End Web Development

    2.6.1.   Accessible Design

    2.6.2.   Evaluation Tools and Techniques

    2.6.3.   Implementation of ARIA Roles and Attributes

2.7.   System Design in Front-End Web Development

    2.7.1.   System Design

    2.7.2.   Creation and Maintenance of Style Guides

    2.7.3.   Use of Tools such as Storybook

2.8.   UI Design and UX Principles in Front-End Web Development

    2.8.1.   Colors and Fonts

    2.8.2.   User-Centered Design and Empathy Maps

    2.8.3.   Prototyping and Iterative Feedback

2.9.   Advanced Responsive Design in Front-End Web Development

    2.9.1.   Advanced Techniques and Modern Approaches

    2.9.2.   Mobile - First and Adaptability Design

    2.9.3.   Testing and Tools for Responsive Design

2.10.   Design Trends in Front-End Web Development

    2.10.1.   UI Voice Design and Virtual Assistants

    2.10.2.   Augmented and Virtual Reality in UI

    2.10.3.   Future of Web Design and Emerging Technologies

Module 3. Internationalization and Front-End Web Accessibility

3.1.   Internationalization (i18n) in Front-End Web Development

    3.1.1.   Localization and Globalization Strategies

    3.1.2.   Tools and Frameworks for i18n

    3.1.3.   Handling Dates, Currencies and Pluralizations

3.2.   Implementing Accessibility in Front-End Web Development

    3.2.1.   WCAG and ARIA

    3.2.2.   Accessibility Testing and Validation Tools

    3.2.3.   Practical Examples and Correction of Common Accessibility Problems

3.3.   International SEO in Front-End Web Development

    3.3.1.   SEO Strategies for Multilingual Sites

    3.3.2.   URL Structure and hreflang Tags

    3.3.3.   Content Optimization for Specific Markets

3.4.   Frameworks and Libraries for i18n in Front-End Web Development

    3.4.1.   Integration of i18next, React Intl, and Other Libraries

    3.4.2.   Translation Management and Localization Workflows

    3.4.3.   Internationalization Automation

3.5.   Multilingual Usability Testing in Front-End Web Development

    3.5.1.   Testing with Users in Different Languages

    3.5.2.   Cultural Adaptation and Usability

    3.5.3.   Strategies for Collecting and Applying International Feedback

3.6.   Accessibility in SPA and PWA Applications in Front-End Web Development

    3.6.1.   Accessibility in SPA and PWA

    3.6.2.   Techniques to Improve Accessibility in Dynamic Applications

    3.6.3.   Application Examples and Practical Solutions

3.7.   International Front-End Web Development Standards

    3.7.1.   International Data Protection Policies

    3.7.2.   Impact of International Legislation on Web Design and Development

    3.7.3.   Strategies for Keeping Up to Date and Complying with Standards

You will become familiar with micro-front-end architectures, acquiring skills in developing attractive design systems and integrating effective localization and globalization strategies"
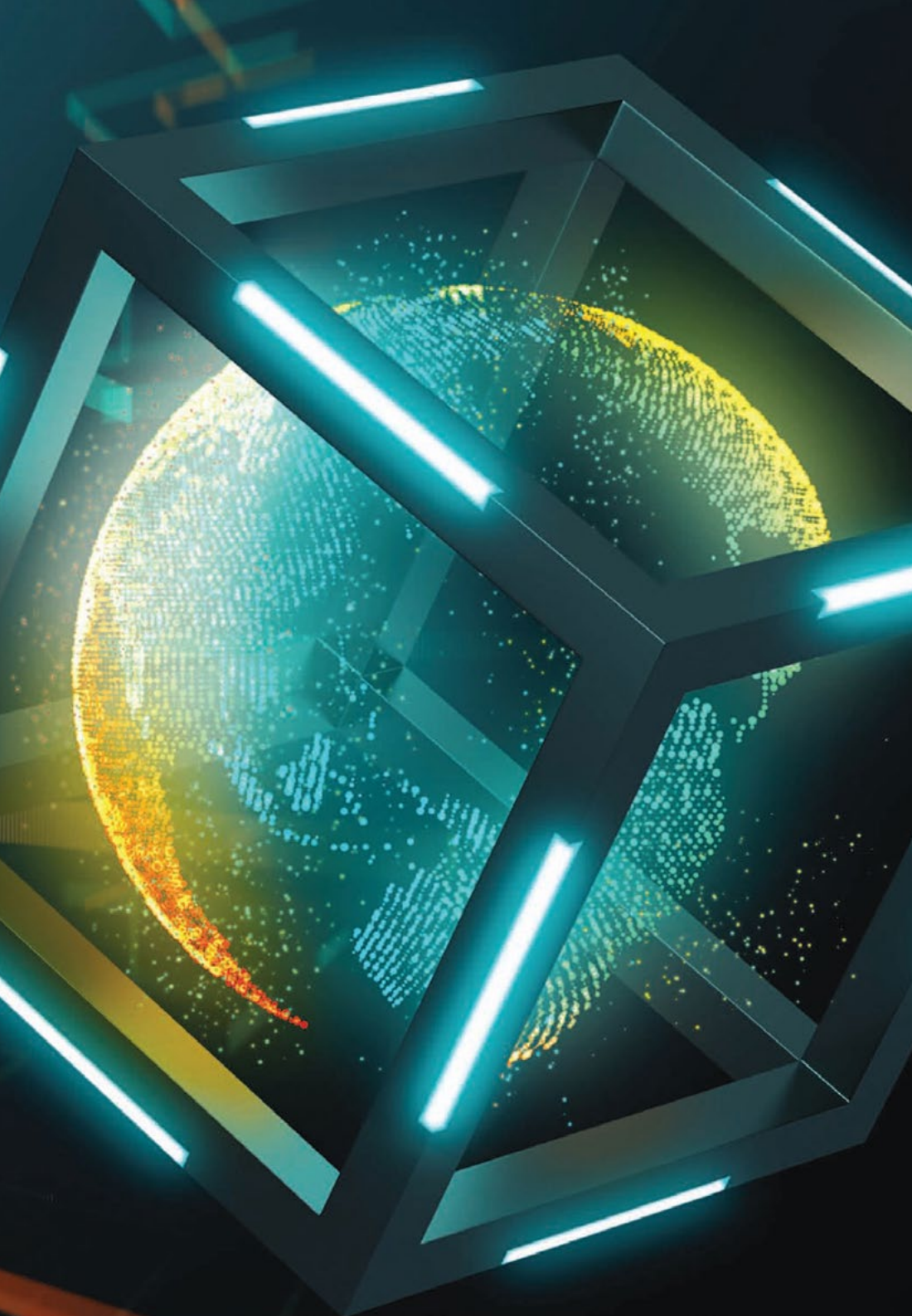
05
Methodology

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.

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.

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.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

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%

20%

25%

4%

3%
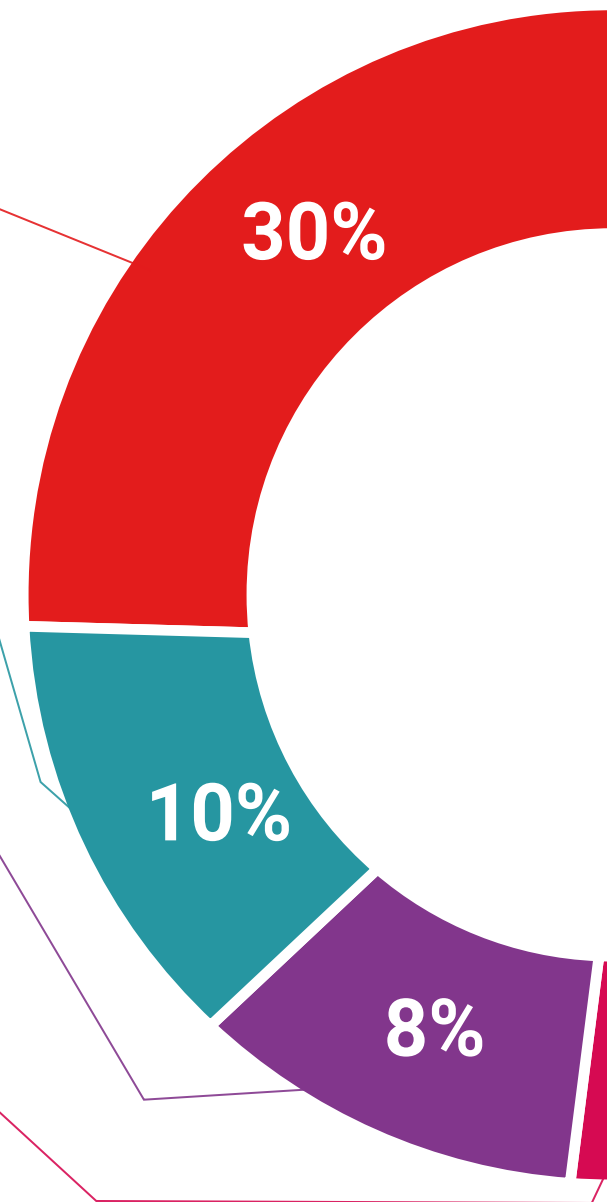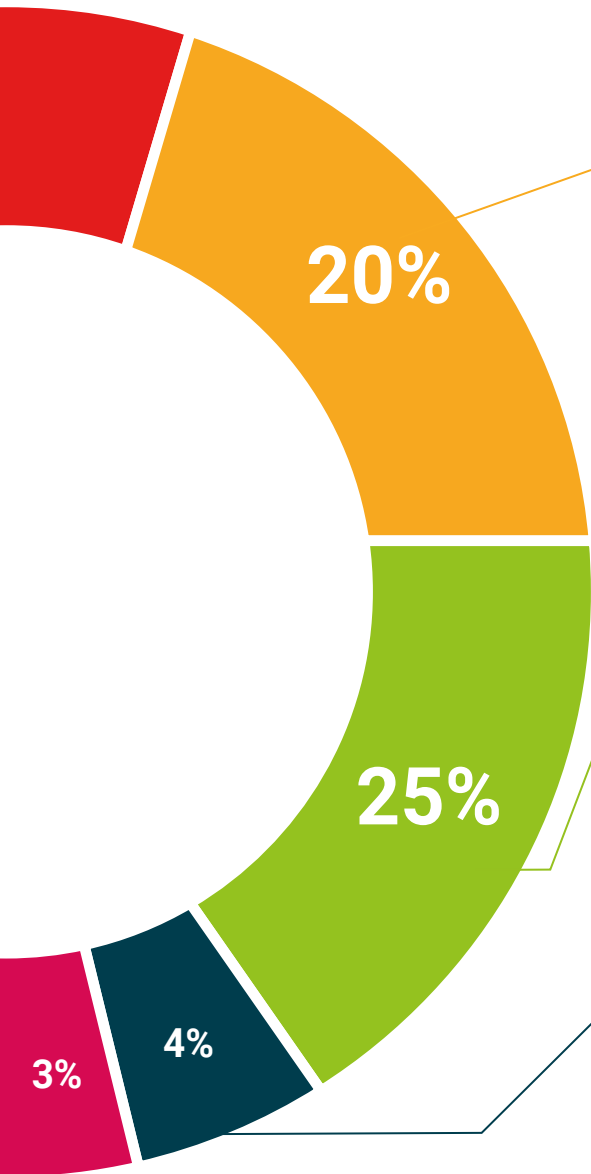
Case Studies

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.

Certificate

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

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

This program will allow you to obtain an **Postgraduate Diploma in Architecture in Front-End Web 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.
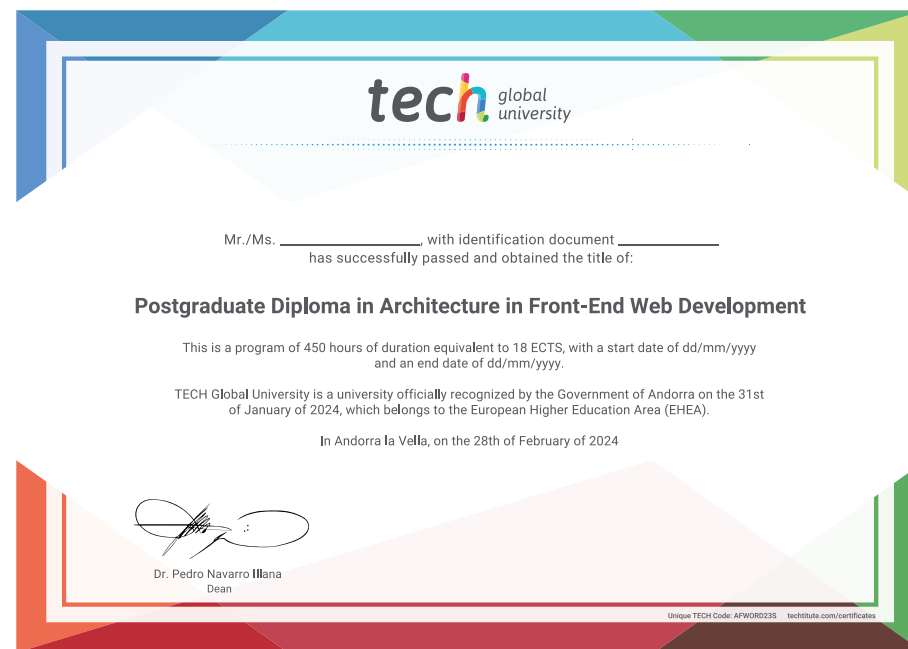
This **Tech Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Architecture in Front-End Web Development**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**

tech global university

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

Postgraduate Diploma in Architecture in Front-End Web Development

This is a program of 450 hours of duration equivalent to 18 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

*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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Architecture in Front-End Web Development

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» Schedule: **at your own pace**
» Exams: **online**

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