

# Postgraduate Certificate

## Advanced Angular Front-End Development





## Postgraduate Certificate Advanced Angular Front-End Development

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

Website: [www.techtitute.com/us/information-technology/postgraduate-certificate/advanced-angular-front-end-development](http://www.techtitute.com/us/information-technology/postgraduate-certificate/advanced-angular-front-end-development)



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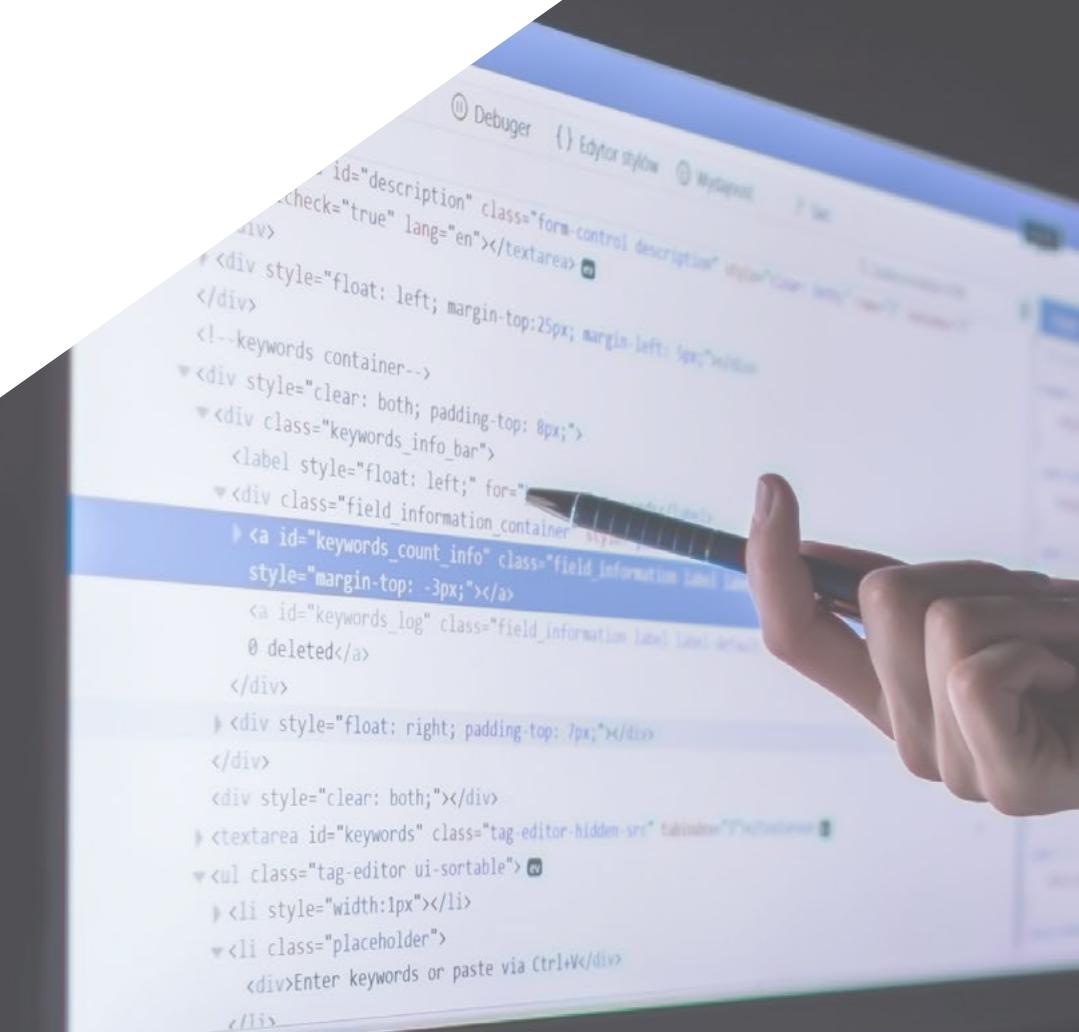
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01

# Introduction

Angular has become one of the most powerful JavaScript development frameworks today. This platform facilitates the creation of dynamic, single-page web applications, allowing companies to improve the user experience and increase long-term retention. Given its multiple benefits, more and more entities are demanding the incorporation of computer scientists specialized in Advanced Angular Front-End Development. To take advantage of these opportunities, developers need to acquire a competitive advantage that differentiates them from other candidates. For this reason, TECH creates a university program that will deal with Angular Architecture and Modules, as well as its correct integration with emerging technologies. And all in a convenient 100% online format.



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*Thanks to this 100% online Postgraduate Certificate, you will improve the user experience by implementing animations, transitions and other visual effects”*

Testing in Angular is an extremely important procedure that allows you to identify and correct errors early in the development process, which contributes to the creation of higher quality software. This helps reduce the costs associated with resolving problems later in the application lifecycle, when their correction may be more complex. In the same vein, these tests ensure that websites function correctly and respond appropriately to user actions. This translates into a better consumer experience and, therefore, generates a higher degree of satisfaction.

In this context, TECH creates a revolutionary Postgraduate Certificate in Advanced Angular Front-End Development. The curriculum will delve into the configuration of test environments with Jasmine and Karma. At the same time, the syllabus will delve into Advanced Path Management for graduates to build seamless user experiences and ensure smooth navigation between different application components.

In line with this, the training materials will provide computer scientists with the most advanced strategies for both event and data handling to improve interactivity on websites.

It should be noted that the program will provide developers with a theoretical foundation, but will also allow them to adequately deal with practical situations. The only thing they will need is an electronic device with Internet access to enter the Virtual Campus (a cell phone, computer or even a tablet). In addition, this Postgraduate Certificate is backed by the extensive experience of TECH's outstanding teaching staff, and is supported by an innovative and cutting-edge teaching methodology. This is Relearning, which consists of the repetition of essential concepts to achieve more effective knowledge acquisition.

This **Postgraduate Certificate in Advanced Angular Front-End 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 Front-End Web 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 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

A large, stylized yellow double quote mark, used as a graphic element to introduce a quote.

*You will have the best multimedia resources with which you will be able to enrich your learning and put what you have studied into practice in a easier way"*

“

*You will enrich your daily practice with the most advanced HTTP Client security techniques to strengthen the protection of communications between a front-end application and a back-end server”*

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.

Are you looking for the most comprehensive testing to detect early errors? Achieve it with this academic itinerary in only 150 hours.

You will study through innovative multimedia didactic formats that will optimize your learning process, including interactive summaries.



02

# Objectives

After 150 teaching hours, computer scientists will have a comprehensive knowledge of Advanced Angular Front-End Development. In this sense, students will develop skills to manage the state of applications in an efficient and scalable way. They will also use the RxJS library for reactive state management, which will allow developers to handle the complexity of asynchrony in development through the use of observables and operators. In addition, graduates will implement animations, transitions and other visual effects into their projects in order to improve the user experience.



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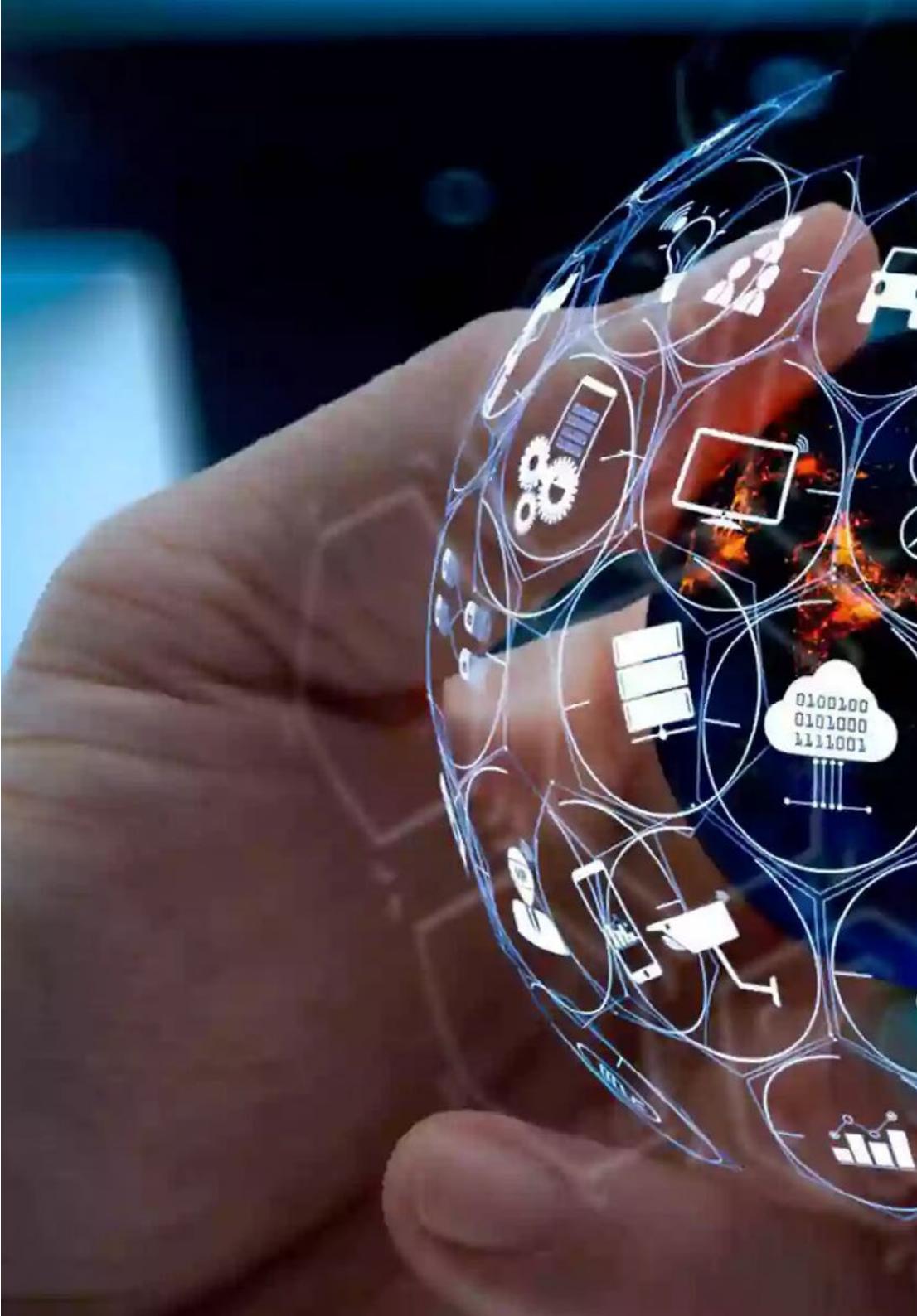
*You will build complete web applications using Angular, from initial architecture creation to implementation and deployment in production"*



## General Objectives

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- Provide a solid and advanced foundation in Angular, from its internal architecture to its integration with other modern web development technologies and tools
- Generate specialized knowledge on the most advanced development, testing and optimization techniques to improve the efficiency of the development process and the quality of the final product
- Keep students updated with the latest trends and improvements in the Angular ecosystem, equipping them with the necessary skills to adapt and lead in the changing world of web development
- Implement animations, transitions and other visual effects to enhance the user experience in applications





## Specific Objectives

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- Apply Angular application architecture principles
- Implement RxJS for reactive state management
- Optimize Angular applications for superior performance
- Perform comprehensive testing on Angular applications
- Secure Angular applications against common vulnerabilities
- Integrate internationalization into Angular

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*You will apply advanced techniques to optimize the performance of Angular applications, including improving load time”*

03

# Course Management

TECH's main premise is to offer academic itineraries of supreme quality. For this reason, it carries out a careful selection process to choose its teaching staff. For the design of this Postgraduate Certificate, it brings together prestigious experts in the field of Front-End Development. These professionals have a vast knowledge on this subject, in addition to an extensive career where they have offered multiple innovative solutions. Thanks to this, students will enjoy a progressive and natural learning process that will allow them to optimize their daily practice. In this way, they will be qualified to take advantage of the opportunities offered by the computer industry.



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*You will consult your doubts directly with the teaching team, who will be available to offer you personalized tutoring to help you enhance your learning”*

## 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

### Mr. Gallegos Quishpe, Darío Fernando

- Senior iOS Developer at Tecdata
- iOS Developer at Sandav Consulting
- iOS Developer at BBVA
- Hybrid Developer at IMBox
- Degree in Computer Engineering from Universidad Complutense de Madrid
- Certification in Development for Mobile Devices with Android from Comunidad de Madrid
- Certificate in Big Data & Machine Learning from Universidad Complutense de Madrid



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# Structure and Content

This Postgraduate Certificate will specialize students in the Angular Framework to build robust, scalable and high performance web applications. To achieve this, the academic path will delve into the Angular Architecture and Modules. In addition, the curriculum will delve into the RxJS library to enable computer scientists to write clearer code for working with asynchronous data in modern web applications. In tune with this, the academic content will provide graduates with the most innovative optimization and performance analysis techniques. In addition, the program will emphasize the relevance of preserving application security and will delve into the most common vulnerabilities.



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*A curriculum that will equip you with the most effective Caching and Service Workers strategies to improve the user experience"*

## Module 1. Advanced Angular Front-End Development

- 1.1. Angular Architecture and Modules in Front-End Web Development
  - 1.1.1. Angular Application Architecture
  - 1.1.2. Lazy Loading and Module Organization
  - 1.1.3. Dependency Injection and Providers
- 1.2. Advanced Path Management with Angular Applications in Front-End Web Development
  - 1.2.1. Dynamic Configuration of Routes
  - 1.2.2. Lazy Loading Tactics
  - 1.2.3. Advanced Navigation Strategies
- 1.3. RxJS and Reactive State Management with Angular Applications in Front-End Web Development
  - 1.3.1. Reactive Patterns with RxJS
  - 1.3.2. Advanced Strategies for Event and Data Handling
  - 1.3.3. RxJS Integration with Angular and HTTP Forms
- 1.4. Optimization of Angular Applications in Front-End Web Development
  - 1.4.1. Optimization Techniques and Performance Analysis
  - 1.4.2. AOT Compilation and Tree Shaking
  - 1.4.3. Caching and Service Worker Strategies
- 1.5. Testing in Angular in Front-End Web Development
  - 1.5.1. Test Environment Configuration with Jasmine and Karma
  - 1.5.2. Testing Components, Services and Pipes
  - 1.5.3. Mocking and Dependency Management in Test
- 1.6. Dynamic Forms and Validation with Angular Applications in Front-End Web Development
  - 1.6.1. Reactive Forms vs. Template-Driven
  - 1.6.2. Custom Validators and Form State Handling
  - 1.6.3. Integration with External Libraries and Error Handling





- 1.7. Angular Application Security in Front-End Web Development
  - 1.7.1. Security in Angular
    - 1.7.1.1. Common Vulnerabilities
    - 1.7.1.2. XSS and CSRF Sanitization and Prevention
  - 1.7.2. Authentication and Authorization Strategies
    - 1.7.2.1. JWT and OAuth2
    - 1.7.2.2. Route Guards
  - 1.7.3. Security Enhancements with HTTP Client
- 1.8. Development of Angular Libraries in Front-End Web Development
  - 1.8.1. Creating and Publishing Reusable Libraries
  - 1.8.2. Best Practices and Versioning
  - 1.8.3. Library Integration and Documentation
- 1.9. Angular Universal for SSR in Front-End Web Development
  - 1.9.1. Configuration and Optimization of Angular Universal
  - 1.9.2. SEO and Load Time Improvements
  - 1.9.3. Prerendering Strategies and Static Content Generation
- 1.10. State of the Art and Trends in Front-End Web Development
  - 1.10.1. Recent Updates and Angular Roadmap
  - 1.10.2. Angular Tools and Ecosystem
  - 1.10.3. Integration with Emerging Technologies

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*The virtual campus will be available to you 24 hours a day, and you can access it at the time that suits you"*

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

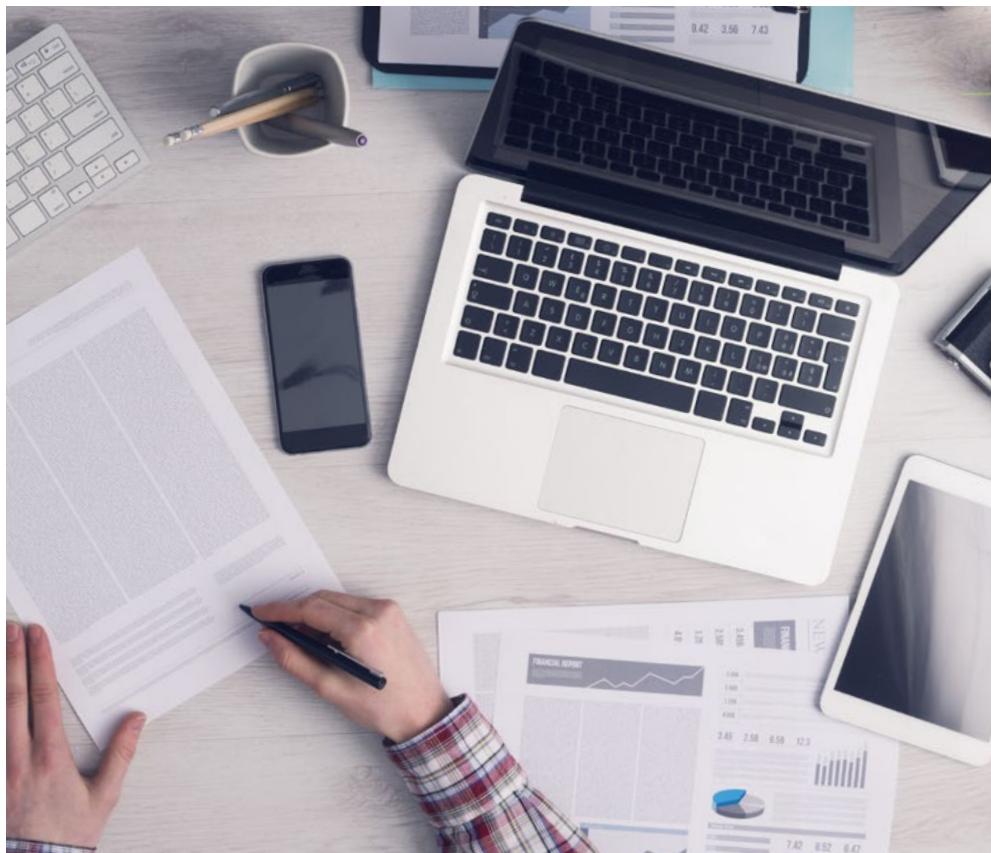
Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

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*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.

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*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.



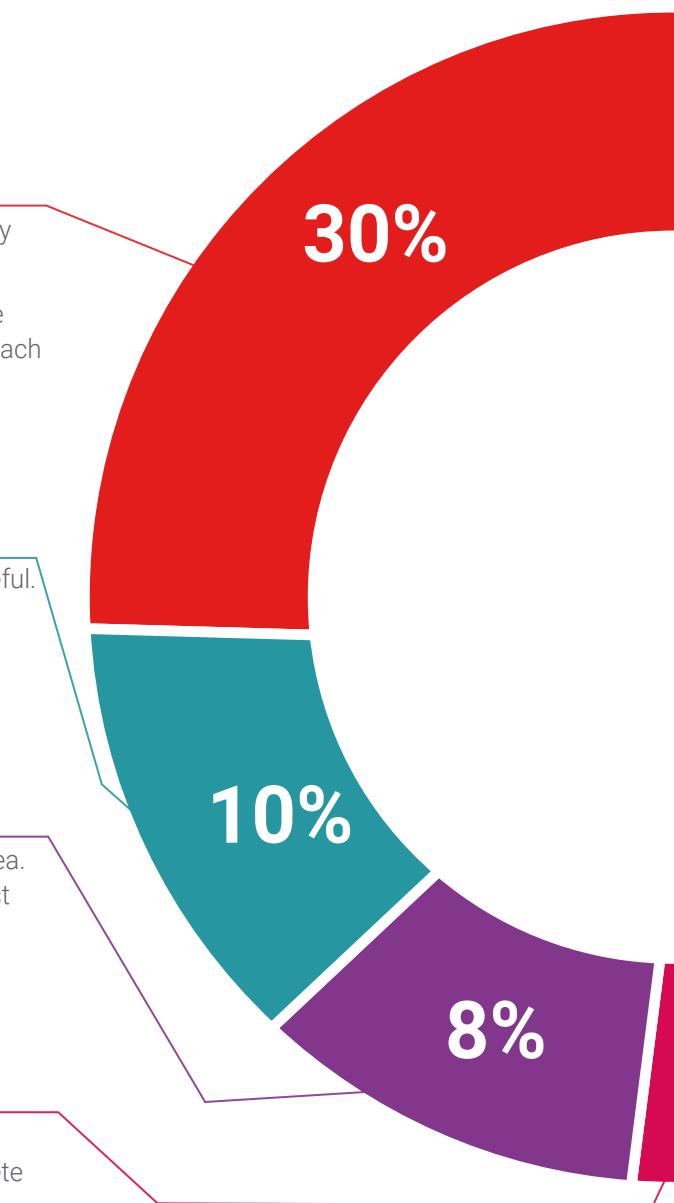
#### Practising Skills and Abilities

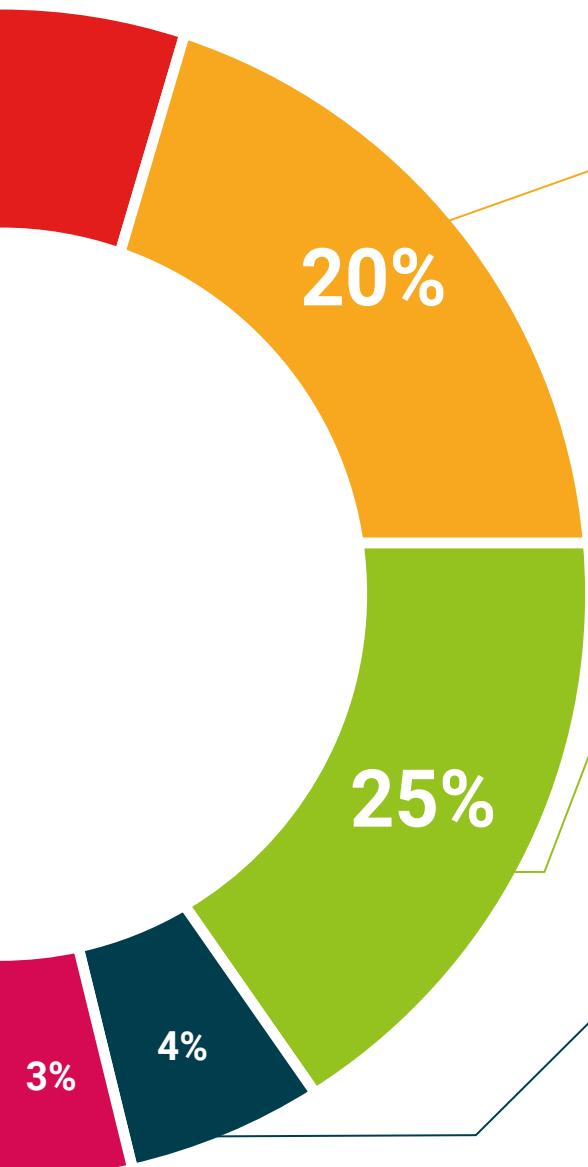
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



#### 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.



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# Certificate

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



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

This **Postgraduate Certificate in Advanced Angular Front-End Development** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Advanced Angular Front-End Development**

Modality: **online**

Duration: **6 weeks**



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



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