

Postgraduate Certificate

Advanced Front-End Development

```
elif _operation == "MIRROR_Y":  
    mirror_mod.use_x = False  
    mirror_mod.use_y = True  
    mirror_mod.use_z = False  
elif _operation == "MIRROR_Z":  
    mirror_mod.use_x = False  
    mirror_mod.use_y = False  
    mirror_mod.use_z = True  
  
#selection at the end -add back the deselected  
mirror_ob.select=1  
modifier_ob.select=1  
bpy.context.scene.objects.active = modifier_ob  
print("Selected modifier (modifier_ob) is modifier"
```



Postgraduate Certificate Advanced Front-End Development

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

Website: www.techtitude.com/us/information-technology/postgraduate-certificate/advanced-front-end-development

Index

01

Introduction to the Program

p. 4

02

Why Study at TECH?

p. 8

03

Syllabus

p. 12

04

Teaching Objectives

p. 16

05

Study Methodology

p. 20

06

Teaching Staff

p. 30

07

Certificate

p. 34

01

Introduction to the Program

Front-End Development is a fundamental pillar of digital transformation, driven by the growing demand for interactive, accessible, and optimized web experiences. With the expansion of e-commerce and the digitalization of services, companies are looking for specialists capable of creating efficient interfaces adapted to new trends. According to the International Monetary Fund, software programming and development are among the most in-demand skills globally, with a constantly evolving market. In this context, TECH presents a pioneering university program focused on Advanced Front-End Development. In addition, it is delivered in a convenient and fully online modality.



the deselected

modified

#

“

*With this 100% online program, you
will design responsive, accessible
interfaces adapted to different devices”*

Front-end development is key to digital transformation, as it defines the user experience on applications and websites. In a world where digital interaction is essential for businesses and services, having optimized, accessible, and attractive interfaces is a priority. The demand for specialists in this field has grown exponentially, driven by digitization and the need to offer increasingly advanced interactive experiences.

This program offers an advanced approach to Front-End Development technologies and methodologies, providing tools to master modern frameworks, performance optimization, and responsive design. By delving into these areas, you will acquire a highly competitive profile, capable of responding to market demands and adapting to technological trends. In this way, students will develop solid technical skills to build dynamic, accessible, and high-performance web interfaces, effectively integrating external services and managing complex front-end architectures.

The online format of this program allows you to access up-to-date content with complete flexibility, eliminating geographical barriers and adapting to different learning paces. This model makes it easier to balance other activities, allowing you to advance in your studies without compromising work or personal responsibilities. In addition, access to state-of-the-art digital resources and teachers with industry experience ensures dynamic, applied learning that is aligned with current market needs.

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

- ♦ The development of case studies presented by experts in Technology
- ♦ 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
- ♦ Special emphasis on innovative methodologies in Software Development
- ♦ 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



Learn how to optimize front-end performance by implementing strategies such as lazy loading, code splitting, and progressive rendering"

“

Thanks to the Relearning system, you won't have to invest a lot of hours studying, and you'll be able to focus on the most relevant concepts”

Implement automated testing with tools such as Jest, ensuring code quality and interface stability.

Create advanced animations with GSAP and Framer Motion to improve interaction and visual experience in web applications.

The teaching staff includes professionals from the field of technology, who bring their work experience to this program, as well as renowned specialists from leading companies 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 an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.



“

Study at the largest online university in the world and ensure your professional success. The future begins at TECH”

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



03 Syllabus

Front-End Development has evolved rapidly, driven by the need for dynamic, accessible, and efficient interfaces. That's why this syllabus covers everything from advanced fundamentals to the most innovative trends, providing a comprehensive understanding of Web design and programming. Thanks to a practical and up-to-date approach, you'll acquire the skills you need to stand out in a highly competitive and constantly changing industry.

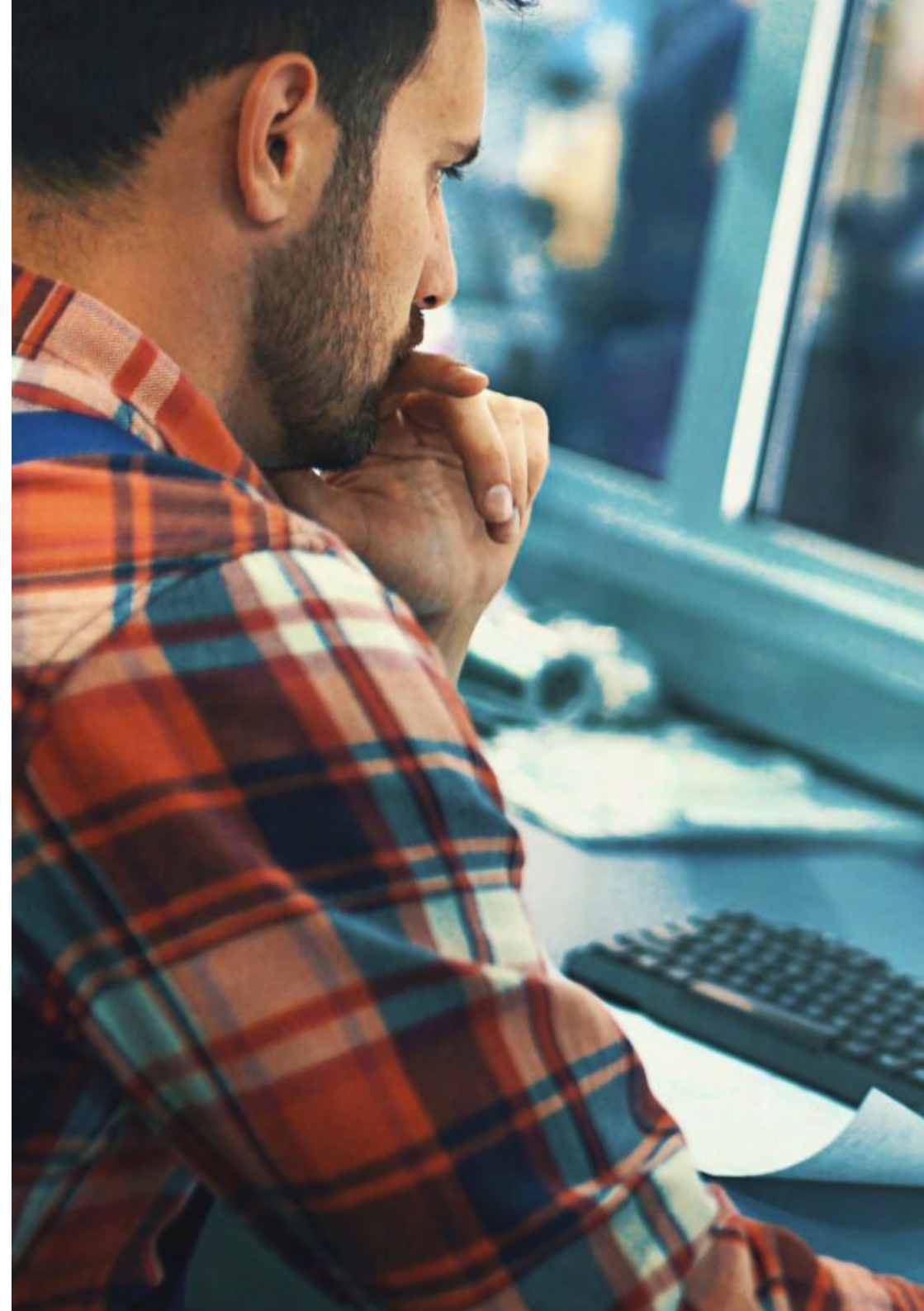


“

Develop progressive applications using Service Workers and offline storage to ensure better performance on mobile devices”

Module 1. Advanced Front-End for Seniors

- 1.1. Modern Frameworks
 - 1.1.1. Vue.js: State, Components, and Lifecycle
 - 1.1.2. Svelte, Comparison with React
 - 1.1.3. Modern Development Tools (Vite, Webpack)
- 1.2. Front-End Performance Optimization
 - 1.2.1. Lazy Loading and Code Splitting
 - 1.2.2. Efficient Global State Management
 - 1.2.3. Progressive Rendering Techniques
- 1.3. Automated Front-End Testing
 - 1.3.1. Tools such as Jest and Cypress
 - 1.3.2. Component and Functionality Testing
 - 1.3.3. Automated Integration Testing
- 1.4. Advanced Development with React
 - 1.4.1. Advanced and Customized Hooks
 - 1.4.2. Context API and Redux for State Management
 - 1.4.3. Design Patterns in Components
- 1.5. Advanced Animations in Frontend
 - 1.5.1. Use of Libraries such as GSAP and Framer Motion
 - 1.5.2. Complex Transitions in SPAs
 - 1.5.3. Animation Optimization for Performance
- 1.6. Progressive Web App (PWA) Development
 - 1.6.1. Progressive Web Apps (PWA)
 - 1.6.2. Service Workers and Offline Storage
 - 1.6.3. Optimization Strategies for Mobile Devices
- 1.7. Advanced Form Management in Frontend
 - 1.7.1. Complex Form Validations
 - 1.7.2. Nested Data Handling
 - 1.7.3. Synchronization with APIs



- 1.8. API Consumption in Frontend
 - 1.8.1. Integration with REST and GraphQL
 - 1.8.2. Error Handling and Loading States
 - 1.8.3. Request Optimization Strategies
- 1.9. Visual Testing and Accessibility in Frontend
 - 1.9.1. Responsive Design Testing
 - 1.9.2. Web Accessibility Validation
 - 1.9.3. Tools such as Lighthouse
- 1.10. Front-End Deployment and Monitoring
 - 1.10.1. Deployment on Platforms such as Netlify or Vercel
 - 1.10.2. Configuration for Production Environments
 - 1.10.3. Performance Monitoring with Advanced Tools



You will be prepared to structure scalable projects, following best practices in code development and organization”

04

Teaching Objectives

This university program aims to provide in-depth, up-to-date knowledge of Front-End Development, covering everything from advanced principles to the most innovative tools and methodologies. In addition, graduates will gain advanced skills to develop modern, responsive, and accessible web interfaces. Students will master frameworks such as React and Angular, integrate external APIs, and optimize Front-end performance. They will also acquire skills in testing, state management, and continuous deployment, preparing them to tackle complex projects with an up-to-date technical vision focused on the user experience.



“

Manage complex forms with advanced validations and efficient synchronization with APIs”



General Objectives

- ♦ Provide in-depth knowledge of advanced software architectures and their applicability in professional environments
- ♦ Provide a comprehensive overview of modern back-end development, covering architectures, tools, and best practices
- ♦ Develop efficient and scalable front-end applications with modern technologies
- ♦ Apply advanced data science and machine learning techniques
- ♦ Understand the fundamentals of cybersecurity and its importance in software development
- ♦ Master the fundamental principles of DevOps and its impact on software development
- ♦ Implement the principles of the agile manifesto in development environments
- ♦ Manage the differences and benefits of native and cross-platform mobile development
- ♦ Analyze the fundamental concepts of cloud computing and its impact on application development and operation





Specific Objectives

- ♦ Implement front-end applications with Vue.js, Svelte, and React
- ♦ Optimize performance using lazy loading, code splitting, and progressive rendering
- ♦ Automate unit, integration, and visual testing with tools such as Jest and Cypress
- ♦ Manage global state efficiently with Redux and Context API



Apply UI/UX design principles to improve the user experience in interactive web applications”

05 Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



“

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

“

*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“

TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

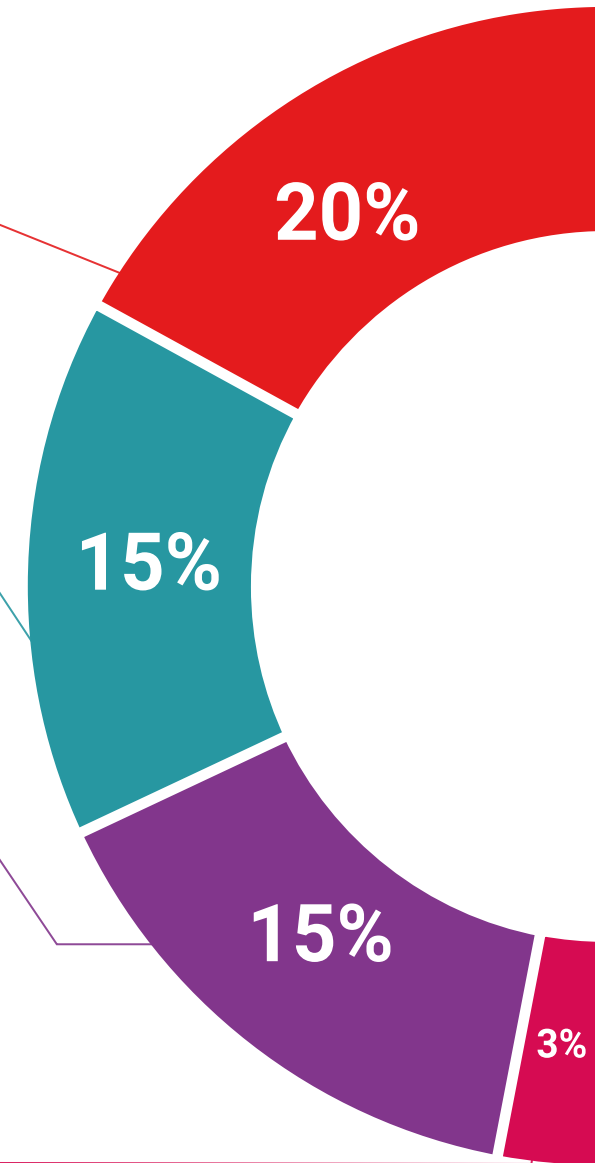
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

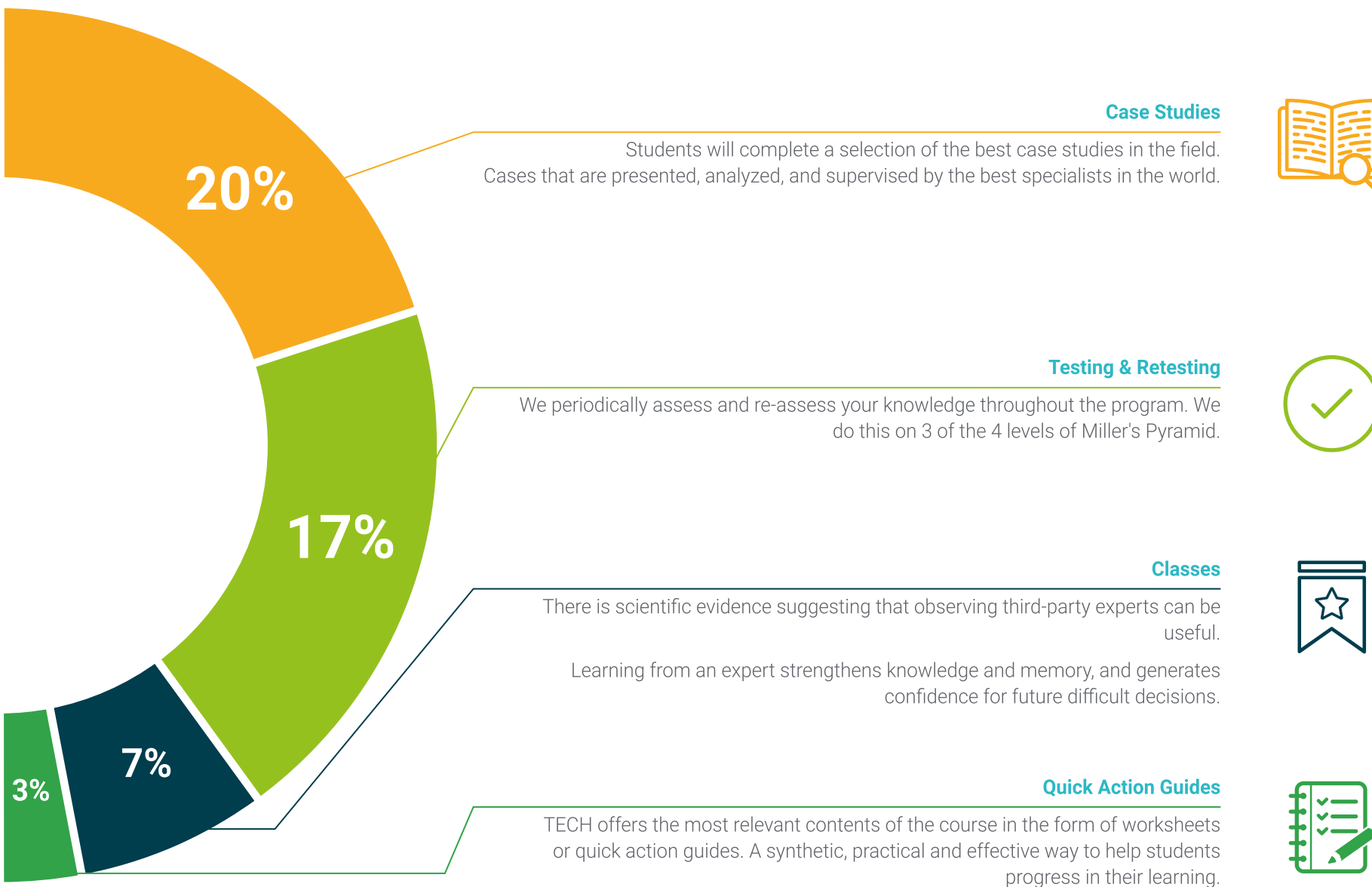
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





06

Teaching Staff

The teaching staff for this program is made up of specialists with extensive experience in Front-End Development, ensuring a practical approach that is aligned with industry trends. Thanks to their experience in leading companies and innovative projects, they offer a comprehensive overview of the most advanced technologies, best practices, and current market challenges. In addition, their ability to convey knowledge in a clear and structured manner allows for effective immersion in key topics. Through their expert guidance, students acquire the technical and strategic skills essential to excel in a highly competitive digital environment.




```
elif _operation == "MIRROR_Z":  
    mirror_mod.use_x = False  
    mirror_mod.use_y = False  
    mirror_mod.use_z = True  
  
#selection at  
mirror_ob.sel  
modifier_ob  
bpy.con  
print
```

“

TECH has a teaching team made up of experts in Front-End Development, with extensive experience in the industry and in the use of advanced technologies”

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 Cantoblanco Polytechnic School Campus
- Master's Degree 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

Mr. Gallegos Quishpe, Darío Fernando

- ♦ Senior iOS Developer at Tecdata
- ♦ iOS Developer at Sandav Consulting
- ♦ iOS Developer at BBVA
- ♦ Hybrid Developer at IMBox
- ♦ Bachelor's Degree in Computer Engineering from the Complutense University of Madrid
- ♦ Certification in Mobile Development with Android from the Community of Madrid
- ♦ Certificate in Big Data & Machine Learning from the Complutense University of Madrid

“

A unique, crucial and decisive learning experience to boost your professional development”

07 Certificate

This Postgraduate Certificate in Advanced Front-End Development guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the 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 diploma for the **Postgraduate Certificate in Advanced Front-End 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 Development**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge presentation
development languages
virtual classroom



Postgraduate Certificate Advanced Front-End Development

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

Postgraduate Certificate

Advanced Front-End Development

