

# Postgraduate Certificate Interface Development with React.js from Scratch



## Postgraduate Certificate Interface Development with React.js from Scratch

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

Website: [www.techtute.com/us/information-technology/postgraduate-certificate/interface-development-reactjs-scratch](http://www.techtute.com/us/information-technology/postgraduate-certificate/interface-development-reactjs-scratch)

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# 01

# Introduction to the Program

Nowadays, the development of user interfaces has become an essential aspect in the creation of modern web applications, with React.js standing out among the main technologies for this purpose. According to the Stack Overflow Developer Survey report, React.js continues to be one of the most widely used libraries worldwide, with an adoption rate of over 40% of professional developers. As it is currently an extremely sought-after area, TECH has designed this Postgraduate Certificate that will cover everything from the basic fundamentals to advanced techniques for creating modern and dynamic interfaces. Using a 100% online methodology, specialists will manage the state of the applications, reusable components and interaction with external APIs, among other things.



“

*Take the first step towards a career in web development with this program. You will learn how to create dynamic applications flexibly and online. Prepare at your own pace, from anywhere and aim for new opportunities!”*

Interface Development with React.js has emerged as one of the most sought-after skills in the technology field, especially for those who want to create interactive, scalable and high-performance web applications. In fact, this powerful JavaScript library allows developers to build modern interfaces with a modular approach. Consequently, React.js is positioned as a fundamental element for projects that require fast and efficient applications.

Taking into account the importance of this field, TECH has designed this program in Interface Development with React.js from Scratch that will provide solid and up-to-date knowledge on this tool. Throughout the program, created by experts from the sector, professionals will learn how to create dynamic interfaces, manage the status of applications, work with reusable components and connect with external APIs. In addition, they will delve into the integration of React with other key technologies such as Redux, enabling them to take on increasingly complex and challenging projects.

In this context, leading companies in the technology industry such as Facebook, Netflix and Airbnb use this library, which guarantees a high demand for developers with expertise in React. By acquiring this related knowledge, graduates will find multiple professional opportunities in the digital industry. In this way, they will be prepared to join web development teams in innovative projects, improving their employability and ability to take on key roles in the creation of interactive applications.

Finally, this program will be delivered 100% online, providing maximum flexibility so that students can study at their own pace, without sacrificing their professional or personal activity. Thanks to the Relearning methodology, the learning process will be optimized through the repetition and consolidation of fundamental concepts. Likewise, the content will be available at any time and from any electronic device connected to the Internet, promoting an accessible learning experience adapted to the needs of experts.

This **Postgraduate Certificate in Interface Development with React.js from Scratch** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- ♦ The development of case studies presented by experts in programming
- ♦ 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 Interface Development with React.js from Scratch
- ♦ 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



*Are you ready to master one of the most in-demand technologies? In TECH you will handle innovative interfaces with the support of the Relearning methodology. Enroll and transform your career from scratch with React.js!"*

“

*Master React.js from scratch and take your projects to the next level! In this online program you will handle everything from the basics to advanced techniques for creating dynamic applications”*

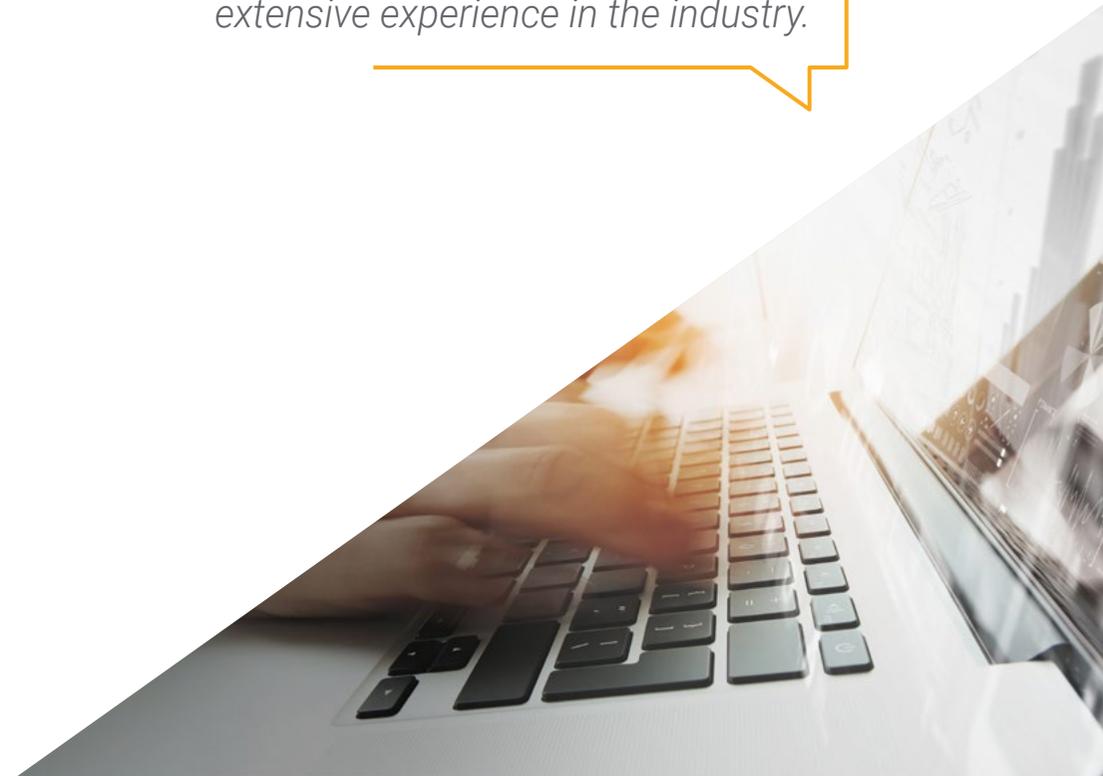
Its teaching staff includes professionals from the field of programming, who bring their work experience to this program, as well as renowned specialists from leading companies and prestigious universities.

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.

*This qualification will allow you to train 24 hours a day, adapting to your schedule and needs. In this way, you will master React.js and the best practices for creating interactive and scalable interfaces.*

*Become an expert in React.js with the support of specialized teachers. You will receive a complete and practical training, under the guidance of mentors with extensive experience in the industry.*



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 relies on an enormous faculty of more than 6,000 professors of the highest international renown.



“

*Study at the world's largest online university and guarantee your professional success. The future starts 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".

**Forbes**  
The best online university in the world

The most complete  
**syllabus**

**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.

**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.

**TOP**  
international faculty

The most effective methodology

**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 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.

**World's No.1**  
The World's largest online university

**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

Throughout an innovative syllabus, professionals will delve into the creation of interactive interfaces using reusable components, the management of application status with tools such as React Hooks and Context API, and the optimization of web application performance. In addition, they will emphasize the integration of Redux for managing the global state of the application and connecting React with external APIs for handling data in real time. Finally, they will master key aspects of front-end development and the management of complex forms to build sophisticated and functional web interfaces.



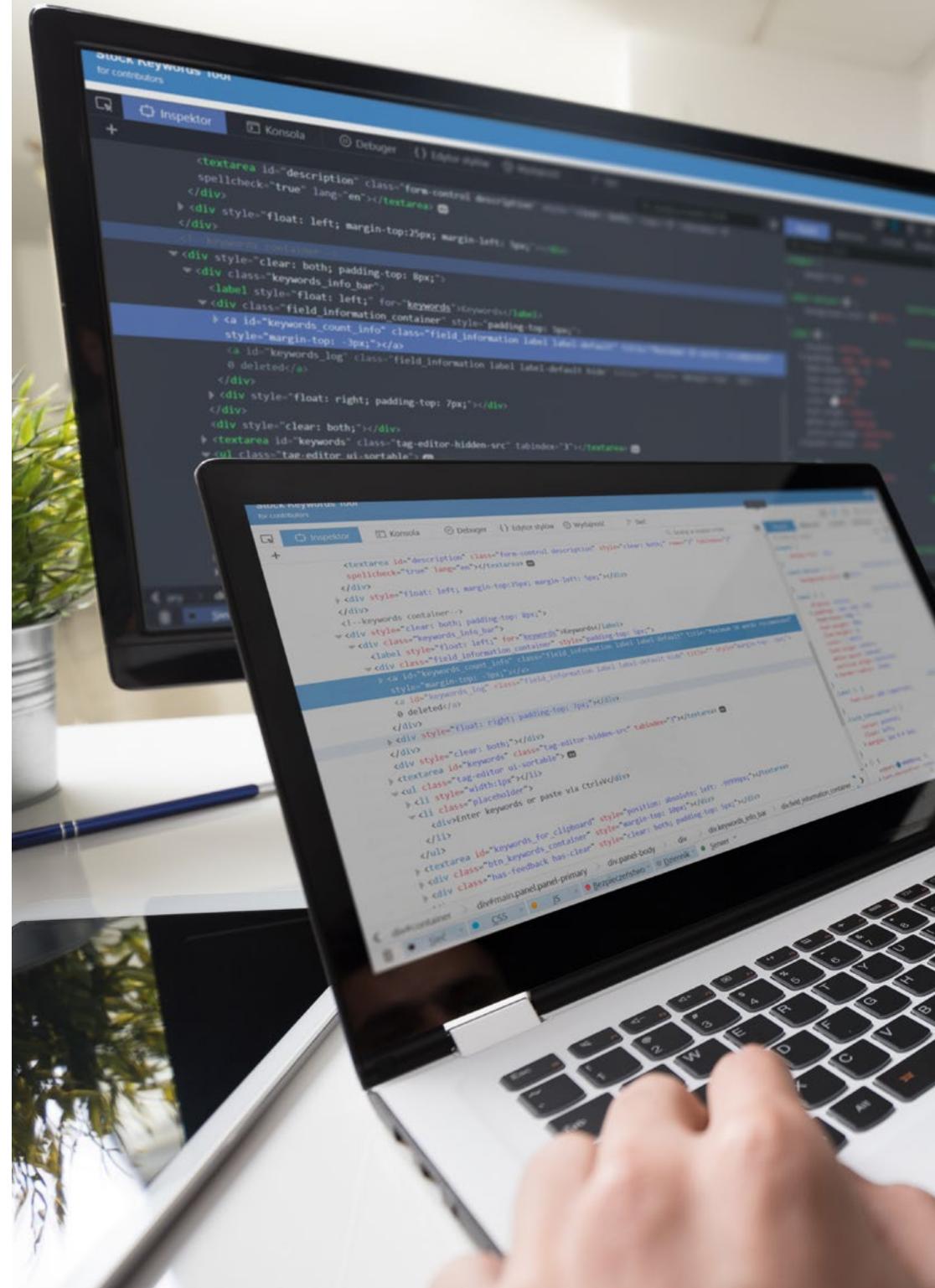


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*Not only will you acquire specialized skills, but you will also be prepared to apply your knowledge in a practical and efficient way in the workplace”*

## Module 1. Front End III - React.js from Scratch

- 1.1. React.js from Scratch
  - 1.1.1. React JS as a Library for Developing Web Applications
  - 1.1.2. Components and Virtual DOM in React JS: Architecture and Operation
  - 1.1.3. Installation and Configuration with the NextJS Frameworks
  - 1.1.4. First Component in React: "Hello World"
- 1.2. JavaScript XML or JSX, and Components in React
  - 1.2.1. JSX: Syntax and Features
  - 1.2.2. Creating Functional Components in React.js
  - 1.2.3. Using Props to Pass Data Between Components
  - 1.2.4. Functional Components vs. Class Components for Development in React.js
- 1.3. State and Events in React.js
  - 1.3.1. Component State in React
  - 1.3.2. Use of useState for State Management
  - 1.3.3. Event Handling in React.js: onClick, onChange, Among Others
  - 1.3.4. Examples of State and Event Management in React.js
- 1.4. Component Lifecycle and Effects in React
  - 1.4.1. Component Lifecycle in React
  - 1.4.2. Using useEffect to Manage Effects in React
  - 1.4.3. Components with Mounting, Updating and Unmounting in React
- 1.5. Routing with React Router
  - 1.5.1. SPA (Single Page Applications) and Routing in Web Applications
  - 1.5.2. React Router Installation and Configuration
  - 1.5.3. Creating Routes and Navigating Between Pages with React Router
- 1.6. Forms and Validation in React
  - 1.6.1. Creating Interactive Forms in React
  - 1.6.2. Handling User Input and Sending Data in React
  - 1.6.3. Real-Time Form Validation in React
- 1.7. Consuming APIs in React
  - 1.7.1. Consuming APIs with Fetch and Axios in React
  - 1.7.2. Handling Loading, Success and Error States in React
  - 1.7.3. Updating Components According to API Data in React



- 1.8. Reusable Components and External Libraries in React
  - 1.8.1. Reusable Components in React
  - 1.8.2. Creating Reusable Components in React
  - 1.8.3. Using External Libraries like Material UI and Bootstrap in React
- 1.9. Global State Management in React
  - 1.9.1. Global State Management with Native Options: Context API and Custom Hooks
  - 1.9.2. External Libraries for Data Management
  - 1.9.3. Comparing Approaches to Global State Management. Examples
- 1.10. React Application Deployment and Optimization
  - 1.10.1. Preparing a React Application for Production
  - 1.10.2. Deploying on Platforms such as Netlify and Vercel
  - 1.10.3. Performance Optimization: Lazy Loading, Memoization, Server Components and Code Splitting
  - 1.10.4. Monitoring and Maintaining React Applications in Production. Tools and Performance Analysis

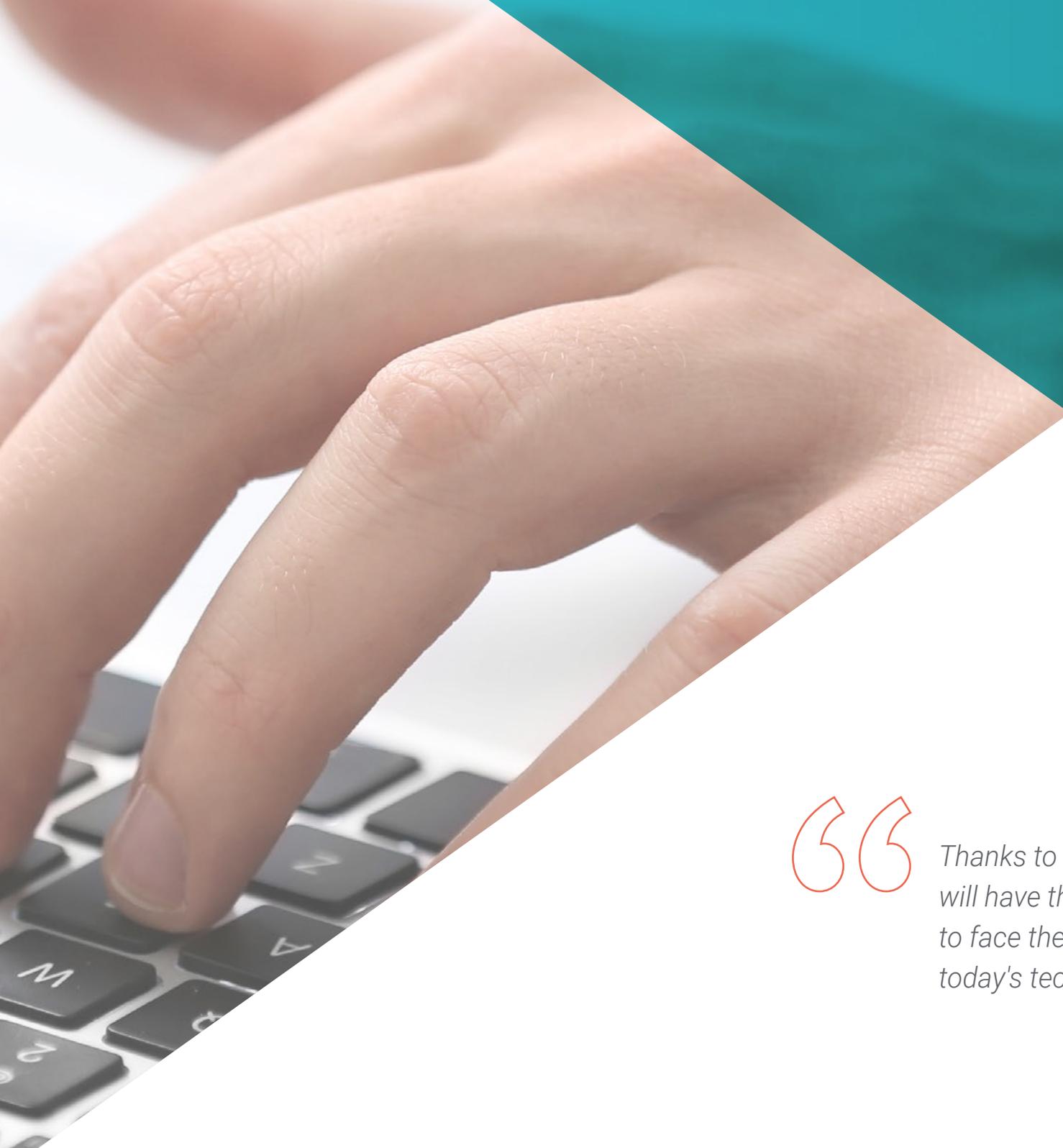
“With up-to-date content and the support of industry experts, you'll be ready to face the challenges of web development. Enroll today and start transforming your professional future!”

# 04

# Teaching Objectives

The main goal of this program is to provide a comprehensive and practical understanding of React.js. From the very beginning, the Postgraduate Certificate will focus on providing a solid foundation, enabling specialists to master the fundamental concepts of React, including the creation of components, the management of state or properties, and the implementation of component lifecycles. In this way, they will acquire the necessary skills to build interactive and scalable interfaces from scratch. They will also know how to integrate external APIs and work with data in real time, an essential skill in contemporary web development.





“

*Thanks to this innovative qualification, you will have the confidence and skills necessary to face the most complex challenges in today's technological world"*



## General Objectives

- Understand the fundamentals of React.js and its importance in the development of dynamic interfaces
- Design reusable and scalable components for modern web applications
- Implement state management with tools such as Redux or Context API
- Use hooks to optimize performance and simplify code in projects
- Integrate external APIs to create interactive and connected applications
- Manage routes and navigation using libraries such as React Router
- Apply advanced concepts such as conditional rendering and event handling
- Develop responsive applications that adapt to different devices and screens
- Solve common problems in React.js using recommended techniques and tools
- Prepare projects optimized for production, including testing and deployment





## Specific Objectives

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- Understand the use of JSX to create declarative interfaces
- Learn to work with functional components, props and life cycles
- Manage local and global states using modern tools such as Context API and Redux Toolkit
- Implement routing to build single-page applications (SPAs)

“

*Not only will you learn how to build high-performance interfaces and create modern applications, but you will also find new opportunities in the digital world. Enroll and start programming your future now!”*

# 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”*

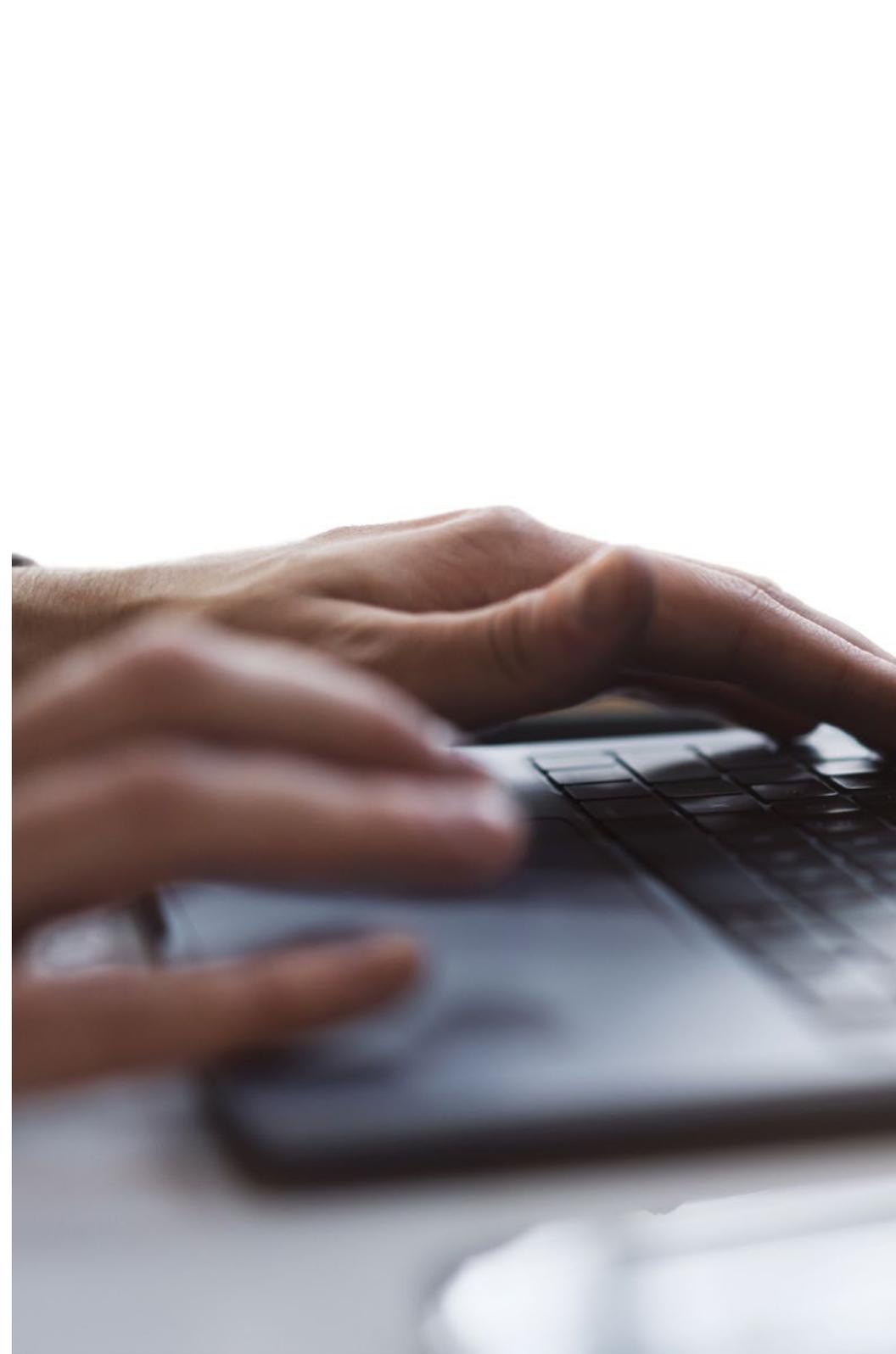
## The student: the priority of all TECH programs

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

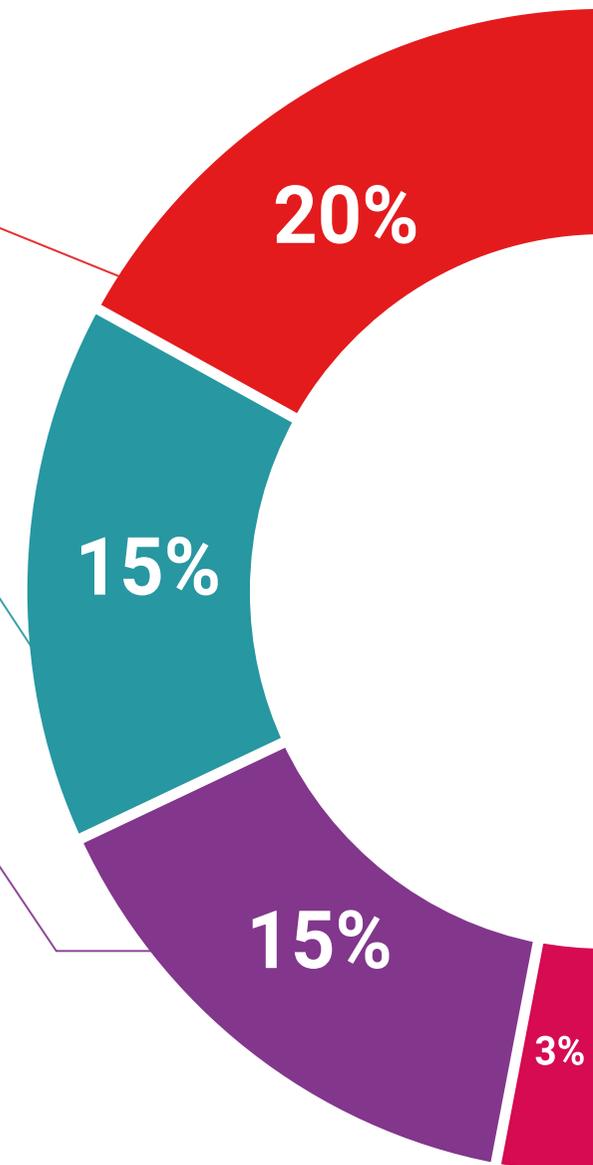
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

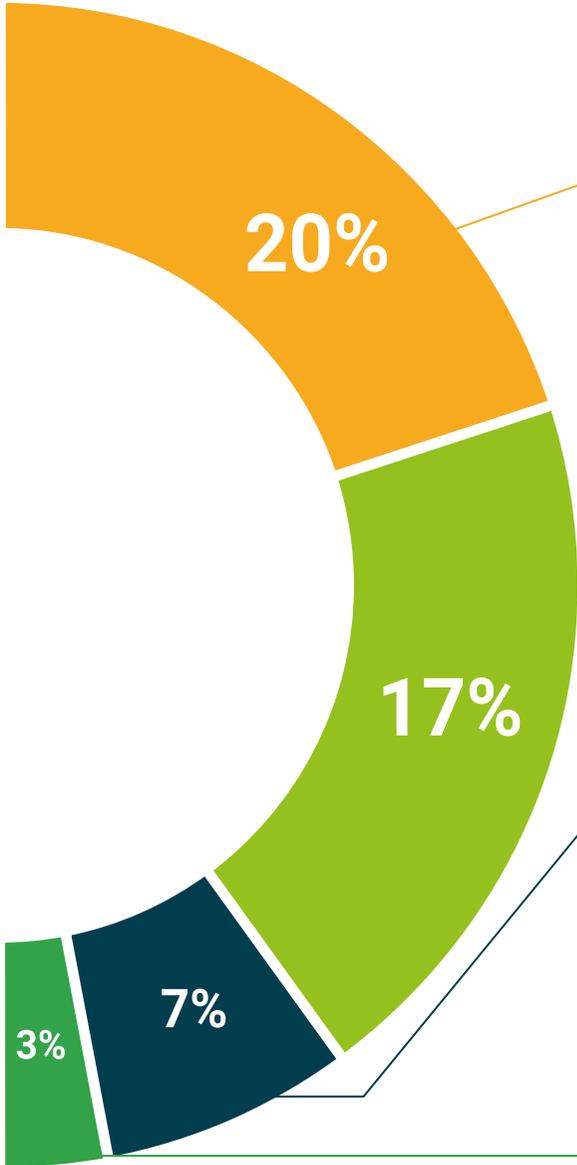
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

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





**Case Studies**

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Testing & Retesting**

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



**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 for future difficult decisions.



**Quick Action Guides**

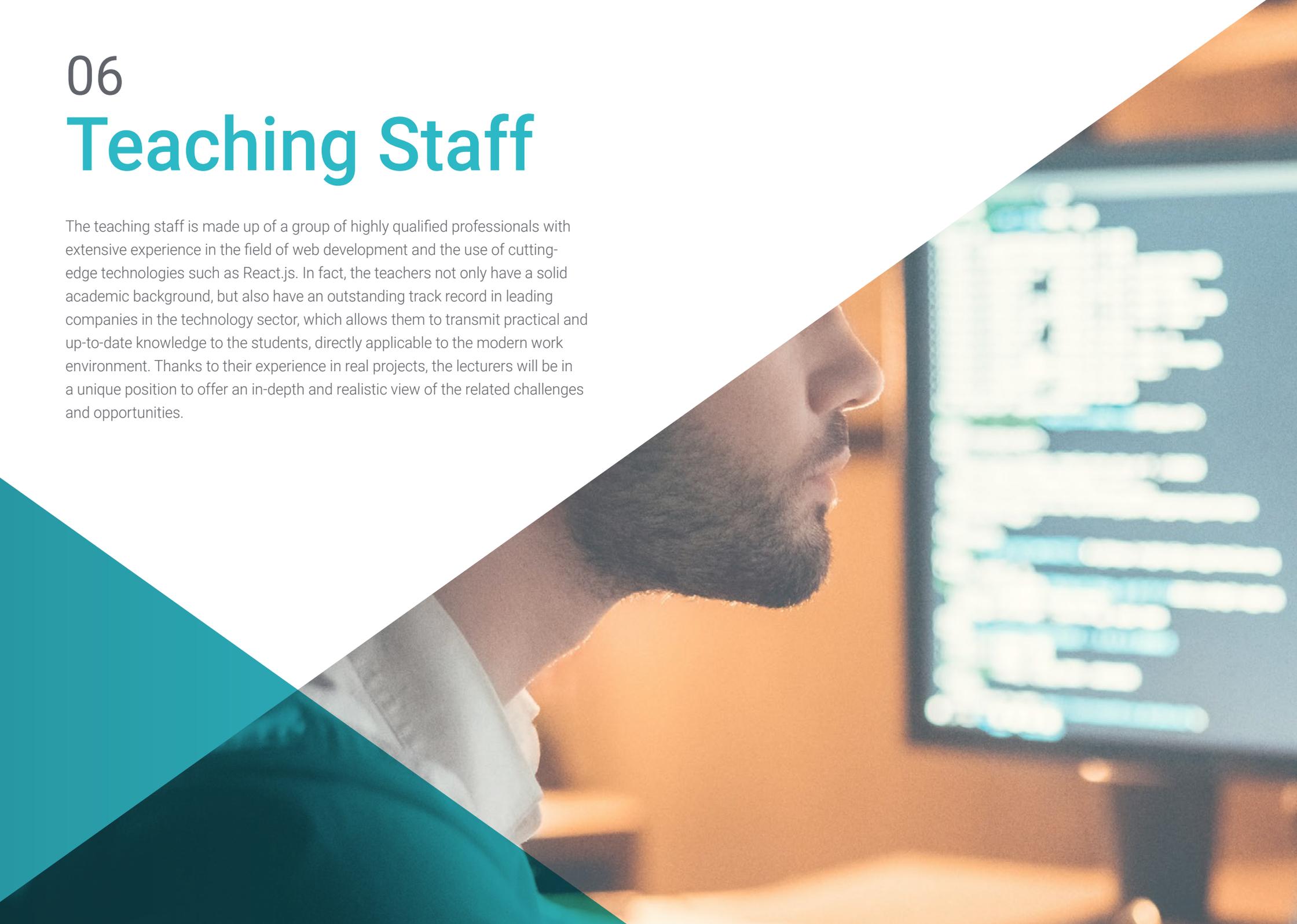
TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.



06

# Teaching Staff

The teaching staff is made up of a group of highly qualified professionals with extensive experience in the field of web development and the use of cutting-edge technologies such as React.js. In fact, the teachers not only have a solid academic background, but also have an outstanding track record in leading companies in the technology sector, which allows them to transmit practical and up-to-date knowledge to the students, directly applicable to the modern work environment. Thanks to their experience in real projects, the lecturers will be in a unique position to offer an in-depth and realistic view of the related challenges and opportunities.



“

*With their expert approach, constant support and practical preparation, the lecturers ensure that you not only learn how to use React.js, but also become a competent web developer, capable of facing challenges”*

## Management



### Dr. Lucas Cuesta, Juan Manuel

- ♦ Senior Software Engineer and Analyst at Indizen – Believe in Talent
- ♦ Senior Software Engineer and Analyst at Krell Consulting and IMAGiNA Artificial Intelligence
- ♦ Software Engineer at Intel Corporation
- ♦ Software Engineer at Intelligent Dialog Systems
- ♦ PhD in Electronic Systems Engineering for Intelligent Environments from the Polytechnic University of Madrid
- ♦ Graduate in Telecommunications Engineering at the Polytechnic University of Madrid
- ♦ Master's Degree in Electronic Systems Engineering for Intelligent Environments from the Polytechnic University of Madrid



### Mr. Márquez Ruiz de Lacanal, Juan Antonio

- ♦ Software Developer at GTD Defense & Security Solutions
- ♦ Software Developer at Solera Inc
- ♦ Development and Research Engineer at GRVC Sevilla
- ♦ Co-founder of Unmute
- ♦ Co-founder of VR Educa
- ♦ Academic Exchange in Engineering and Entrepreneurship at the University of California, Berkeley
- ♦ Degree in Industrial Engineering from the University of Sevilla



## Professors

### Dr. Luna Perejón, Francisco

- ◆ Specialist in Computer Architecture and Technology
- ◆ PhD in Computer Engineering from the University of Sevilla
- ◆ Master's Degree in Computer Engineering from the University of Sevilla
- ◆ Degree in Health Engineering from the University of Sevilla
- ◆ Degree in Computer Engineering and Computer Technology from the University of Sevilla
- ◆ Member of: Robotics and Computer Technology Research Group (TEP108)

“

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

# 07 Certificate

This Postgraduate Certificate in Interface Development with React.js from Scratch guarantees, in addition to the most rigorous and up-to-date program, access to an Postgraduate Certificate 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 private qualification will allow you to obtain a diploma for the **Postgraduate Certificate in Interface Development with React.js from Scratch** 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 Interface Development with React.js from Scratch**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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

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



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