

# Postgraduate Diploma JavaScript Development



## Postgraduate Diploma JavaScript Development

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-javascript-development](http://www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-javascript-development)

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# 01

# Introduction

JavaScript is the most widely used programming language in the world, all web pages use it. Although it was originally designed for web browsers, it has evolved and today it is used in all areas of programming. With this program the student will learn how to create web applications with JavaScript, as well as desktop applications, servers or mobile applications, which are increasingly used by users. Under this context, the following 100% online program is presented, focused on developing a language in continuous evolution, with the addition of new features and with a large number of Frameworks.





“

*You will learn all the secrets to create successful projects with JavaScript thanks to this Postgraduate Diploma"*

This program meets the necessary requirements to enable experts in the ICT sector for a correct, attractive and efficient design, with a high level of usability with low server load time and transmitting a unique user experience to the end user, adapted to the needs of the company.

This Postgraduate Diploma prepares the computer scientist to develop all types of JavaScript projects, with special emphasis on the *Full Stack Developer*, the *Reactjs* library and the *Angular Frameworks*. In this way, this program provides an in-depth study of aspects such as the MVC pattern, Hooks, Routing, RxJS, Testing, among others.

In addition, being a 100% online program, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access a rich content that will help you reach the elite of computer science in the JavaScript language at any time of day, combining, at your own pace, your work and personal life with the academic.

This **Postgraduate Diploma in JavaScript 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 JavaScript experts
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions for experts and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*Promote the use of best practices using the MVC pattern through dependency injection and make your project structure stick"*

“

*Develop specialized knowledge to generate a Single Page Application with static content and the methods to pass to work with dynamic content”*

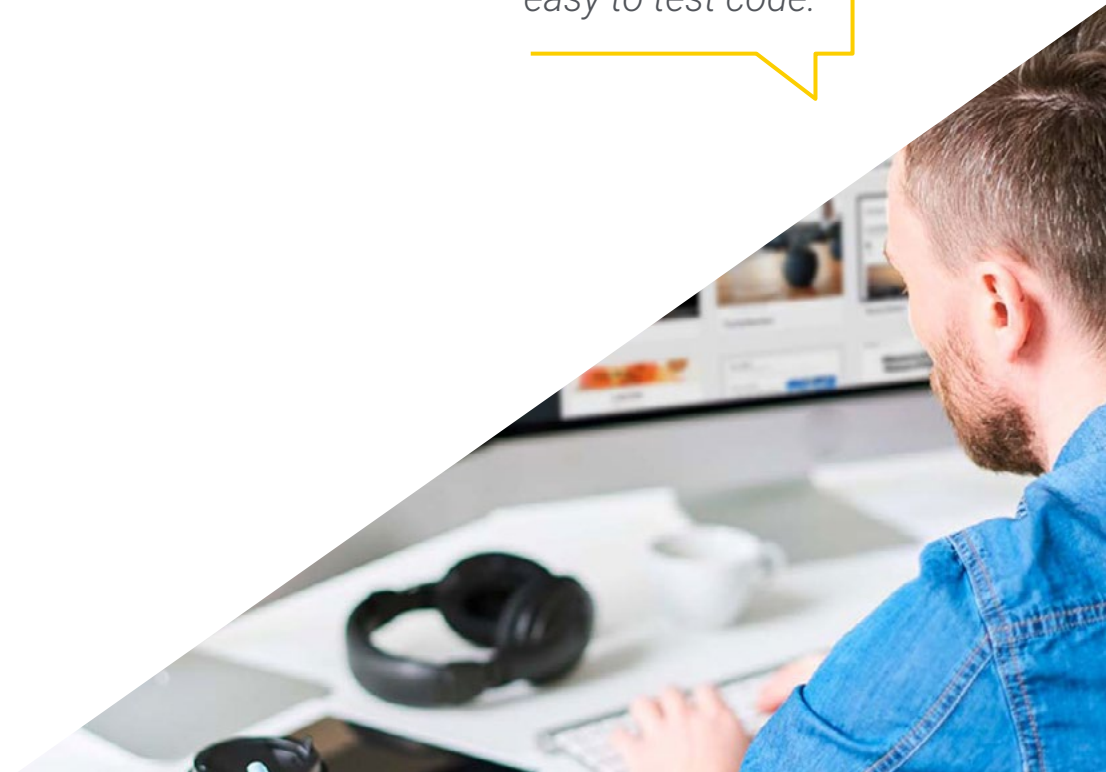
*Delve into the key concepts of the language, the latest language features, as well as asynchronous programming or arrow functions.*

*Learn how to use Angular to write high quality, reusable, maintainable and easy to test code.*

The program's teaching staff includes professionals from the industry who contribute their work experience to this 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 offer the computer scientist the possibility of incorporating JavaScript as a tool for developing all kinds of projects into their professional practice. Therefore, at the end of this program, you will have the specialized knowledge to provide your company with the opportunity to progress through this language, applying it to new areas such as the development experience with React.







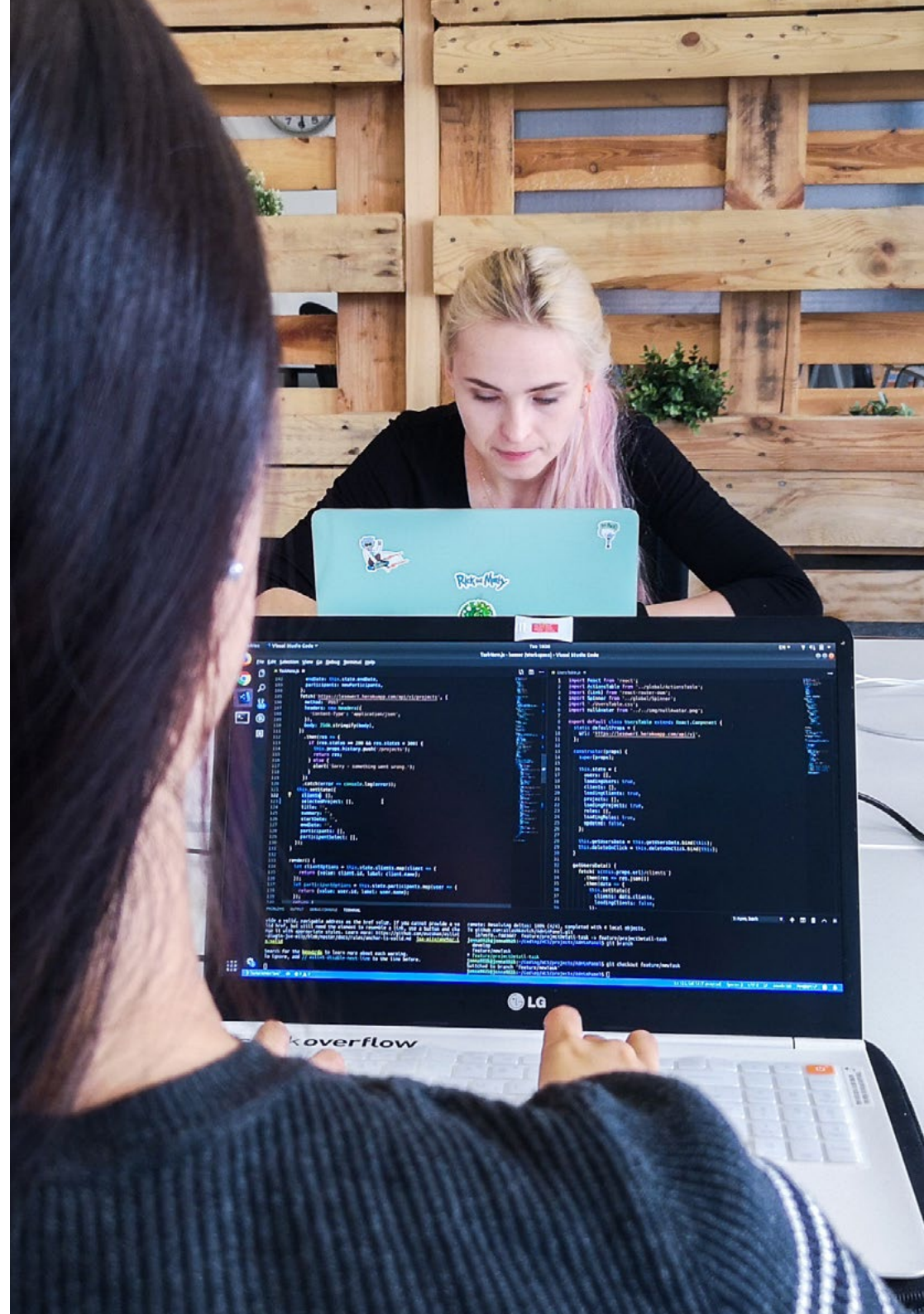
“

*Delve into the topics of Testing, UI Testing, Debugging and Deployment to give your career the boost it needs”*



## General Objectives

- ◆ Generate specialized knowledge about the JavaScript language
- ◆ Be able to develop any type of application with JavaScript
- ◆ Analyze the features and operation of the React library
- ◆ Identify React syntax and how to program using it
- ◆ Develop advanced knowledge to build applications using React
- ◆ Generate specialized knowledge to Deploy and Test Applications
- ◆ Generate specialized knowledge about Angular
- ◆ Discover the full potential of the framework, and its advanced features
- ◆ Establish the necessary knowledge to build an application with Angular





## Specific Objectives

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### Module 1. Javascript Language Applied to Full Stack Developer

- ◆ Establish the basic and complex types offered by JavaScript
- ◆ Analyze the different ways of programming with the language and make a correct use in each situation
- ◆ Update knowledge to the latest versions
- ◆ Discover functional programming
- ◆ Examine asynchronous programming and its characteristics

### Module 2. Javascript Tools. Reactjs Library

- ◆ Determine React functionalities
- ◆ Determine React functionalities
- ◆ Analyze the life cycle of components in React
- ◆ Generate specialized knowledge about modern React functionalities such as Hooks and Context
- ◆ Set global states using Context
- ◆ Create and render lists and Create forms with React
- ◆ Implement field validation in forms
- ◆ Styling components and elements
- ◆ Debugging, Testing and Deploying React Applications

### Module 3. JavaScript Framework. Angular

- ◆ Develop specialized knowledge about the architecture of the Framework
- ◆ Generate a project Commissioning
- ◆ Delve into Angular Methodology
- ◆ Analyze the concept of components
- ◆ Organize the code correctly



*You will acquire agile methodologies such as Angular and see how these can be implemented in the development process"*

# 03

# Course Management

A high-level teaching staff made up of active professionals transmits to the computer scientist all the keys to the application of JavaScript in all types of technological and business projects. Therefore, the teachers of this Postgraduate Diploma will transmit the latest knowledge in this field to the professionals who take it, ensuring that they can later apply everything they have learned in their own careers.



“

*Develop great projects with  
JavaScript with the best  
experts in the field"*

## Management



### Mr. Olalla Bonal, Martín

- ◆ Client Technical Specialist Blockchain in IBM
- ◆ Blockchain Hyperledger and Ethereum Architecture Manager at Blocknitive
- ◆ Director of the Blockchain area at PSS Information Technologies
- ◆ Chief Information Officer at ePETID - Global Animal Health
- ◆ IT Infrastructure Architect at Bankia - wdoIT (IBM - Bankia Join Venture)
- ◆ Project director and manager at Daynet integral services
- ◆ Director of Technology at Wiron Construcciones Modulares
- ◆ Head of IT Department at Dayfisa
- ◆ Head of IT department at Dell Computer, Majsja and Hippo Viajes
- ◆ Electronics Technician in IPPF Juan de la Cierva



## Professors

### Mr. Calzada Martínez, Jesús

- ◆ Senior Software Engineer at Devo
- ◆ Full Stack Developer at Blocknitive
- ◆ Front End Manager in Infinia
- ◆ Full Stack Developer at Resem
- ◆ Java Developer at Hitec
- ◆ Graduate in Computer Engineering

### Mr. Frias Favero, Pedro Luis

- ◆ Co-founder and CTO at Swearit
- ◆ COO at Key Identification
- ◆ Degree in Industrial Engineering from Yacambú University, in Venezuela
- ◆ Expert in Blockchain and Decentralized Applications at the University of Alcalá, Spain

# 04

# Structure and Content

This Postgraduate Diploma in JavaScript Development has specialized and innovative contents in this field. Therefore, the computer scientist who completes it will have delved into aspects such as Full Stack Developer, Browser, Array data structure, ReactJS and framework, among others. By the end of this program, the computer scientist will have become a true specialist in the field, capable of creating high-level projects thanks to the JavaScript language.





```
onString.replaceAll( regex: ",", replacement: " ");  
  
onString.split( regex: ",");  
( expression: location.length >= 2, errorMessage: "Location should constit at least 2 Double parameters");  
uble(location[0]);  
uble(location[1]);
```

```
tydoIRepository,  
populator communityCommunitySoIRdocumentPopulator,  
strategy  
  
tydoIRepository:  
populator = communityCommunitySoIRdocumentPopulator;  
  
communities {  
}} {  
ments = communities  
tydoIRdocumentPopulator.convert(communitySoIRdocument::new, community))  
);  
tion is empty");  
  
query {  
didSearch(query);  
  
ts.stream().map(document -> communityService.getId(document.getId())).collect(Collectors.toList());  
collectionItIs.size(communities), query.getQueryString());
```

“

*A syllabus that gathers specialized knowledge on the framework: birth of a project, injection of dependencies, creation of components and directives or the routing of an application"*

## Module 1. Javascript Language Applied to Full Stack Developer

- 1.1. Primitive Types and Operators
  - 1.1.1. JavaScript Language
  - 1.1.2. Numbers and Their Operators
  - 1.1.3. Text Strings and Their Operators
  - 1.1.4. Boolean Values
  - 1.1.5. Conversion Between Types
- 1.2. Flow Controllers and Structure
  - 1.2.1. Expressions and Statements
  - 1.2.2. Variables and Constants
  - 1.2.3. If Statement
  - 1.2.4. For, While Statements
- 1.3. Functions
  - 1.3.1. Functions
  - 1.3.2. Parameters
  - 1.3.4. Functions as Parameters
  - 1.3.5. Scope of Variables
  - 1.3.6. Nested Scopes
  - 1.3.7. Hoisting
  - 1.3.8. Closures
  - 1.3.9. Recursion
- 1.4. Data Structures: Objects
  - 1.4.1. Object Type
  - 1.4.2. Creation of Objects
  - 1.4.3. Accessing the Values of an Object
  - 1.4.4. Adding or Deleting Properties
  - 1.4.5. Nested Objects
  - 1.4.6. Destructuring Objects
  - 1.4.7. Object Type Methods
  - 1.4.8. Spread Operator
  - 1.4.9. Immutability
- 1.5. Data Structures: Array
  - 1.5.1. Data Structure. Array
  - 1.5.2. Array. Typology
  - 1.5.3. Nested Arrays
  - 1.5.4. Methods of an Array
- 1.6. OOP: Prototype and Classes
  - 1.6.1. OOP: Object Oriented Programming
  - 1.6.2. Prototypes
  - 1.6.3. Classes
  - 1.6.4. Private Data
  - 1.6.5. Subclasses
  - 1.6.6. Call and Apply
- 1.7. JavaScript Types
  - 1.7.1. Set
  - 1.7.2. WeakSet
  - 1.7.3. Map
  - 1.7.4. WeakMap
  - 1.7.5. Common Expressions
- 1.8. JavaScript Utilities
  - 1.8.1. Date
  - 1.8.2. Math
  - 1.8.3. Symbol
  - 1.8.4. JSON
- 1.9. JavaScript in the Browser
  - 1.9.1. Inclusion of JavaScript in a Web
  - 1.9.2. DOM
  - 1.9.3. Events
  - 1.9.4. Browser Storage
- 1.10. Asynchronous Programming
  - 1.10.1. Asynchronous Programming
  - 1.10.2. Event loop
  - 1.10.3. Calbacks
  - 1.10.4. Promises
  - 1.10.5. Async/Await

## Module 2. Javascript Tools. Reactjs Library

- 2.1. ReactJS Javascript Tool
  - 2.1.1. The ReactJS Tool
  - 2.1.2. Create React App
  - 2.1.3. JavaScript Syntax Extension
- 2.2. ReactJS Components
  - 2.2.1. Components
  - 2.2.2. Props
  - 2.2.3. Rendering
- 2.3. Events in the ReactJS Library
  - 2.3.1. Event Handling
  - 2.3.2. Inline Event Handling
  - 2.3.3. Events in the ReactJS Library
- 2.4. Configuring ReactJS Hooks
  - 2.4.1. Status of a Component
  - 2.4.2. Status Hook
  - 2.4.3. Hook Effect
  - 2.4.4. Custom Hooks
  - 2.4.5. Other Hooks
- 2.5. Context Component in ReactJS
  - 2.5.1. Context Component in ReactJS
  - 2.5.2. Using Context
  - 2.5.3. Context Structure
  - 2.5.4. React.CreateContext
  - 2.5.5. Context.Provider
  - 2.5.6. Class.contextType
  - 2.5.7. Context.Consumer
  - 2.5.8. Context.displayName
  - 2.5.9. Practical Application of Context Usage
- 2.6. Routing in ReactJs
  - 2.6.1. Router
  - 2.6.2. React router
  - 2.6.3. Installation
  - 2.6.4. Basic Routing
  - 2.6.5. Dynamic Routing
  - 2.6.6. Primary Components
  - 2.6.7. React Router Hooks
- 2.7. Using Lists and Forms with ReactJS
  - 2.7.1. Lists and Loops
  - 2.7.2. Forms and Validations
  - 2.7.3. Rect Hook Forms
- 2.8. Using Styles in ReactJS
  - 2.8.1. Traditional Styling
  - 2.8.2. Inline Styling
  - 2.8.3. Addition of Design System Library
- 2.9. Performing Tests in Javascript. Data Science
  - 2.9.1. Testing
  - 2.9.2. Jest JavaScript Testing Framework
  - 2.9.3. Visual testing and Documentation
- 2.10. Code Deployment with ReactJS
  - 2.10.1. Hosting
  - 2.10.2. Suppliers
  - 2.10.3. Project Preparation
  - 2.10.4. Deployment on Heroku

### Module 3. JavaScript Framework. Angular

- 3.1. The Angular Framework and its Architecture
  - 3.1.1. Angular CLI
  - 3.1.2. Architecture
  - 3.1.3. Workspace and Structure
  - 3.1.4. Environment
- 3.2. Angular Framework Components
  - 3.2.1. Life Cycle
  - 3.2.2. View Encapsulation
  - 3.2.3. Interaction Between Components
  - 3.2.4. Content Projection
- 3.3. Angular Framework Templates
  - 3.3.1. Text Interpolation
  - 3.3.2. Declarations
  - 3.3.3. Property Binding
  - 3.3.4. Class, Style and Attribute Binding
  - 3.3.5. Event Binding and Two-Way Binding
  - 3.3.6. Pipes
- 3.4. Angular Framework Directives
  - 3.4.1. Angular Directives
  - 3.4.2. Attribute Directives
  - 3.4.3. Structure Directives
- 3.5. Services and Dependency Injection
  - 3.5.1. Services
  - 3.5.2. Dependency Injection
  - 3.5.3. Service Providers
- 3.6. Routing and Navigation
  - 3.6.1. Application with Routing
  - 3.6.2. Basic Routing
  - 3.6.3. Nested Routes
  - 3.6.4. Parameters
  - 3.6.5. Access and Authorization
  - 3.6.6. Lazy Loading of Modules



- 3.7. RxJS
  - 3.7.1. Observables
  - 3.7.2. Observers
  - 3.7.3. Subscriptions
  - 3.7.4. Operators
- 3.8. Forms and HTTP
  - 3.8.1. Reactive Forms
  - 3.8.2. Field Validation
  - 3.8.3. Dynamic Forms
  - 3.8.4. Requests
  - 3.8.5. Interceptors
  - 3.8.6. Security/Safety
- 3.9. Animations
  - 3.9.1. Transitions and Triggers
  - 3.9.2. Path Transitions
  - 3.9.3. Differences Between Transitions
- 3.10. Testing in the Angular Framework
  - 3.10.1. Testing Services
  - 3.10.2. Component Testing
  - 3.10.3. Testing of Directives and Pipelines



*There is no more in-depth and innovative content in JavaScript Development. Enroll now and check it out"*

# 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.*





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

### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

## Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all online universities in the world.*

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



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.



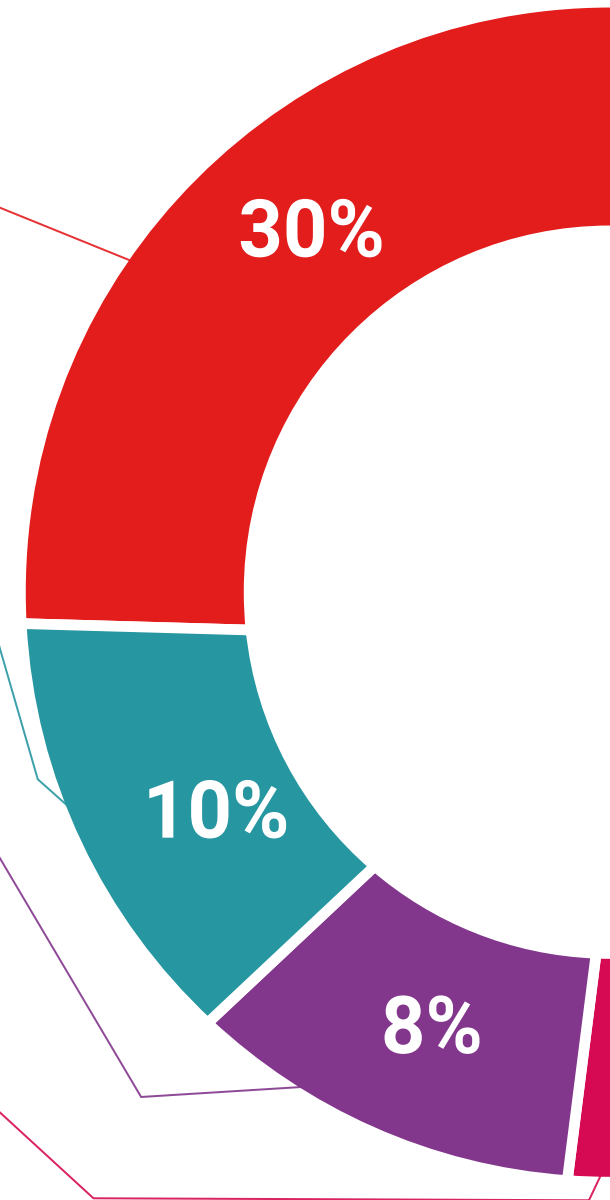
### Practising Skills and Abilities

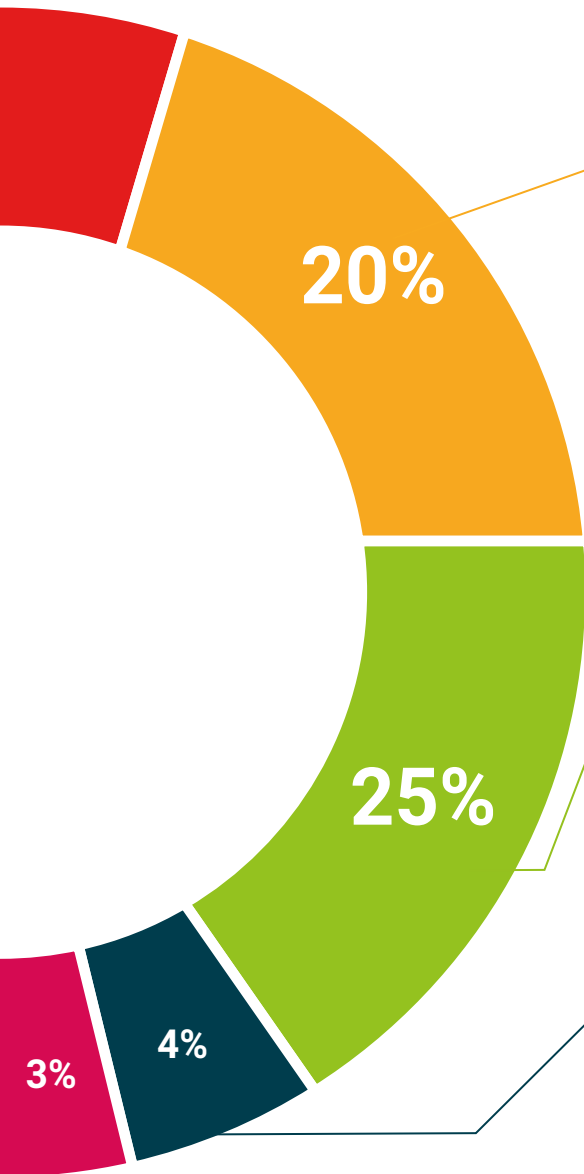
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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.



# 06 Certificate

The Postgraduate Diploma in JavaScript Development guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



“

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

This **Postgraduate Diploma in JavaScript 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 Diploma** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Postgraduate Diploma in JavaScript Development**

Official N° of hours: **450 h.**



\*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.



future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present

online training

development language

virtual classroom

**tech** technological  
university

## Postgraduate Diploma JavaScript Development

- » Modality: **online**
- » Duration: **6 months**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

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