



Hybrid Master's Degree

Front-End Full-Stack Developer Programming

Modality: Hybrid (Online + Internship)

Duration: 12 months

Certificate: TECH Global University

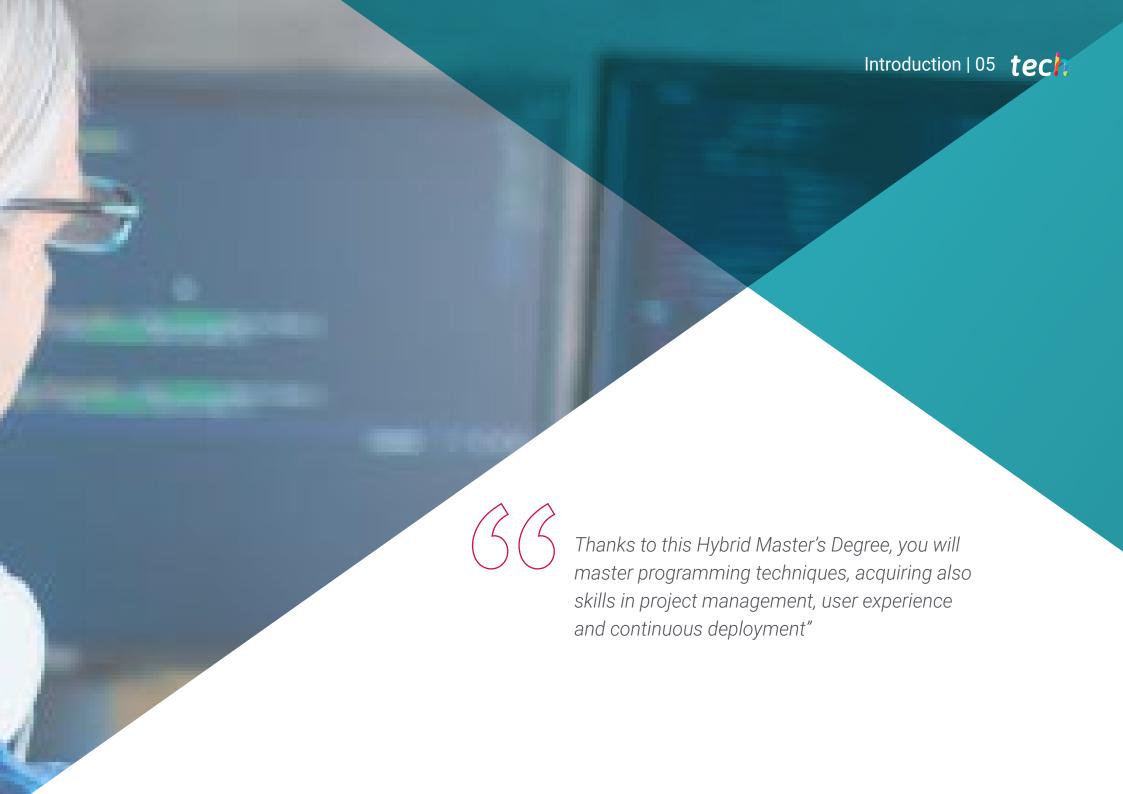
Accreditation: 60 + 4 ECTS

Website: www.techtitute.com/us/information-technology/hybrid-master-degree/hybrid-master-degree-front-end-full-stack-developer-programming

Index

02 03 Introduction Why Study this Hybrid Master's Objectives Skills Degree? p. 4 p. 8 p. 12 p. 18 05 06 **Course Management Clinical Internship Educational Plan** p. 22 p. 26 p. 38 80 Where Can I Do the Methodology Certificate Internship? p. 44 p. 48 p. 56





tech 06 | Introduction

The demand for professionals in Front-End Full-Stack Developer Programming continues to rise, driven by the accelerated digital transformation in multiple sectors. With the proliferation of web and mobile applications, companies are looking for developers who can handle both front-end and back-end.

This is how this Hybrid Master's Degree was created, which will be divided into two distinct sections. First, in a theoretical part that will provide an overview of the technologies and skills necessary for the complete development of web applications, including a focus on front-end programming, where computer scientists will focus on techniques and best practices to create efficient and attractive user interfaces.

Likewise, the curriculum will delve into the JavaScript language applied to Full Stack Developer, crucial for every modern developer, as well as applied web layout, where professionals will structure and style web pages in a professional manner. In addition, JavaScript tools and specific libraries, such as ReactJs, will be indispensable for the development of dynamic and scalable applications.

Likewise, programming in the NodeJS language will be covered in depth, as well as databases for Full-Stack Developers, including server logic and database management. It will also address the importance of user experience, UX CX, and will conclude with continuous integration and application deployment. Finally, the second part of the training will consist of a comprehensive 3-week practical internship in one of the best IT companies, carefully selected to elevate the graduate's career to the next level.

Therefore, TECH has designed a completely online and fully adaptable program, which will only require an electronic device with Internet connection to access the teaching materials. Additionally, the theoretical area will be based on the revolutionary Relearning methodology, pioneer in this university, and consisting of the repetition of key concepts for an optimal and organic assimilation of the contents.

This **Hybrid Master's Degree in Front-End Full-Stack Developer Programming** contains the most complete and up-to-date program on the market. The most important features include:

- Development of more than 100 case studies presented by IT professionals, experts in Front-End Full-Stack Developer programming and university professors with extensive experience in the field
- Its graphic, schematic and eminently practical contents, with which they
 are conceived, gather essential information about those tools that are
 indispensable for the professional practice
- All of this will be complemented by 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
- Furthermore, you will be able to carry out an internship in one of the best companies



You will delve into the creation of user interfaces, with advanced HTML, CSS and JavaScript techniques to design intuitive and responsive user experiences. What are you waiting for to enroll?"



You will focus on the JavaScript language applied to Full Stack Developer, mastering JavaScript, the backbone of most modern web applications. With all quality guarantees!"

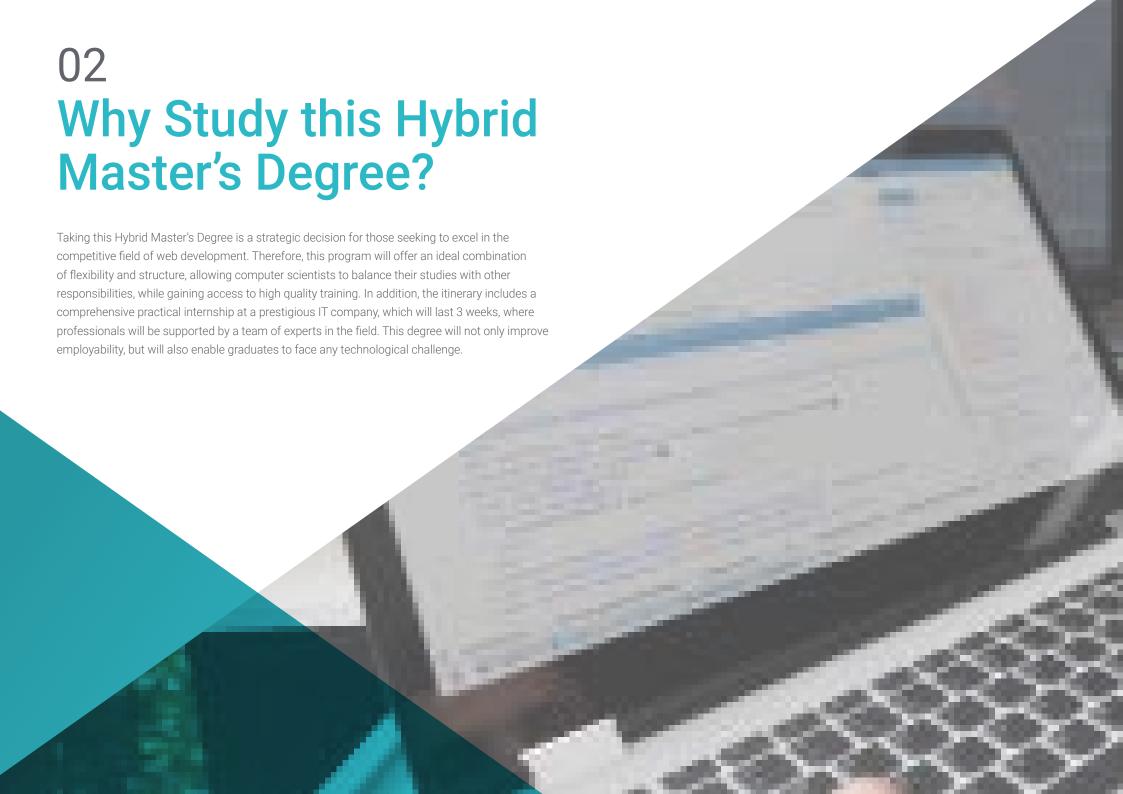
In this Hybrid Master's Degree proposal, of a professionalizing nature and blended learning modality, the program is aimed at updating IT professionals who develop their functions in companies of in software development, and who require a high level of qualification. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge in computer science practice, and the theoretical-practical elements will facilitate the updating of knowledge and allow decision making.

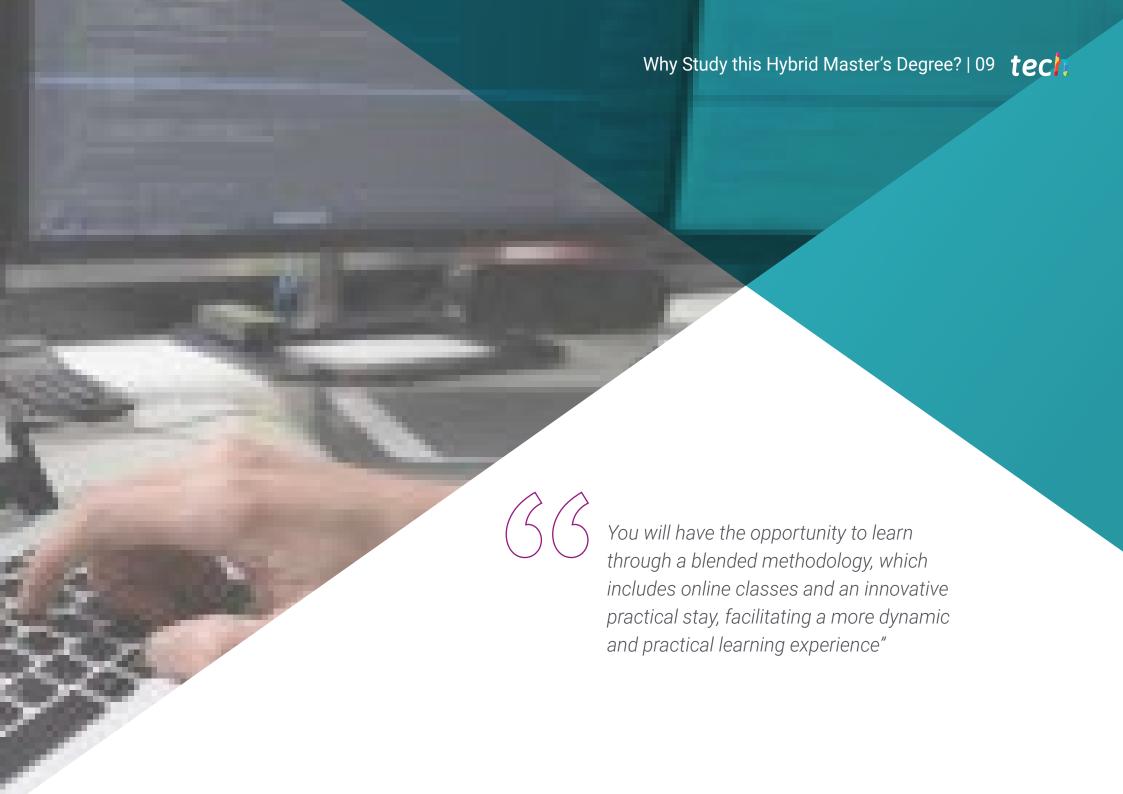
Thanks to its multimedia content elaborated with the latest educational technology, it will allow the Programming professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to specialize in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will carry out an intensive stay of 3 weeks in a prestigious company and will acquire all the knowledge to grow personally and professionally.

You will analyze the principles of usercentered design, improving the customer experience, through the best teaching materials in the academic market, at the forefront of technology and education.







tech 10 | Why Study this Hybrid Master's Degree?

1. Updating from the latest technology available

The latest technology in Front-End Full-Stack Developer programming is characterized by the integration of advanced tools and frameworks that facilitate the development of faster, more secure and scalable web applications. On the front-end, frameworks such as React and Angular continue to evolve, offering improvements in performance and functionality. On the back-end, Node. js continues to be a fundamental tool. These innovations not only improve developer productivity, but also raise the standard for web applications in terms of performance and usability.

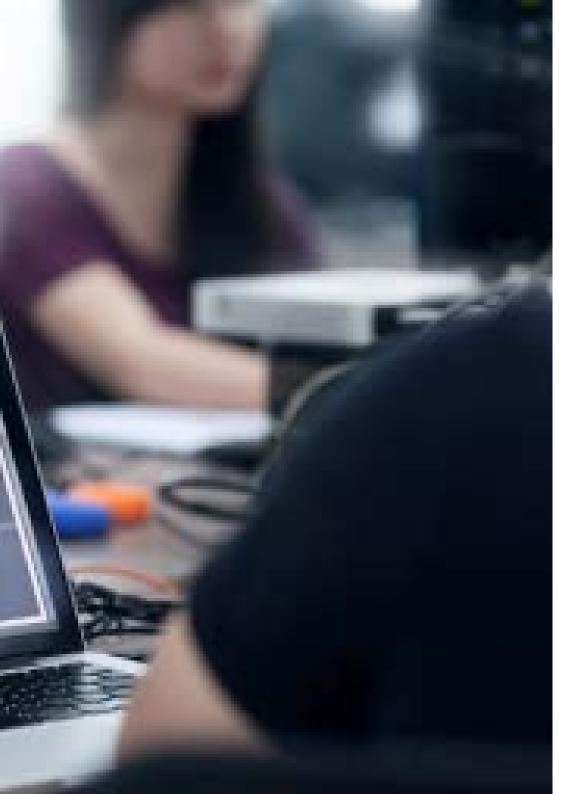
2. Gaining in-depth knowledge from the experience of top specialists

The large team of professionals that will accompany the specialist throughout the practical period is a first-class and an unprecedented guarantee of updating. With a specifically designated tutor, the Computer Scientist will be able to work on real web development projects in a state-of-the-art environment, which will allow them to incorporate the most effective procedures and tools in Front-End Full-Stack Developer programming into their daily practice.

3. Entering first-class professional environments

TECH carefully selects all available centers for Internship Programs. Thanks to this, the specialist will have guaranteed access to a prestigious company in the area of Front-End Full-Stack Developer Programming. In this way, you will be able to see the day-to-day work of a demanding, rigorous and exhaustive sector, always applying the latest theses and scientific postulates in its work methodology.





Why Study this Hybrid Master's Degree? | 11 tech

4. Combining the best theory with state-of-the-art practice

The academic market is plagued by teaching programs that are poorly adapted to the daily work of the specialist and that require long teaching hours, often not very compatible with personal and professional life. TECH offers a new learning model, 100% practical, that allows you to get in front of state-of-the-art procedures in the field of Front-End Full-Stack Developer Programming and, best of all, to put it into professional practice in just 3 weeks.

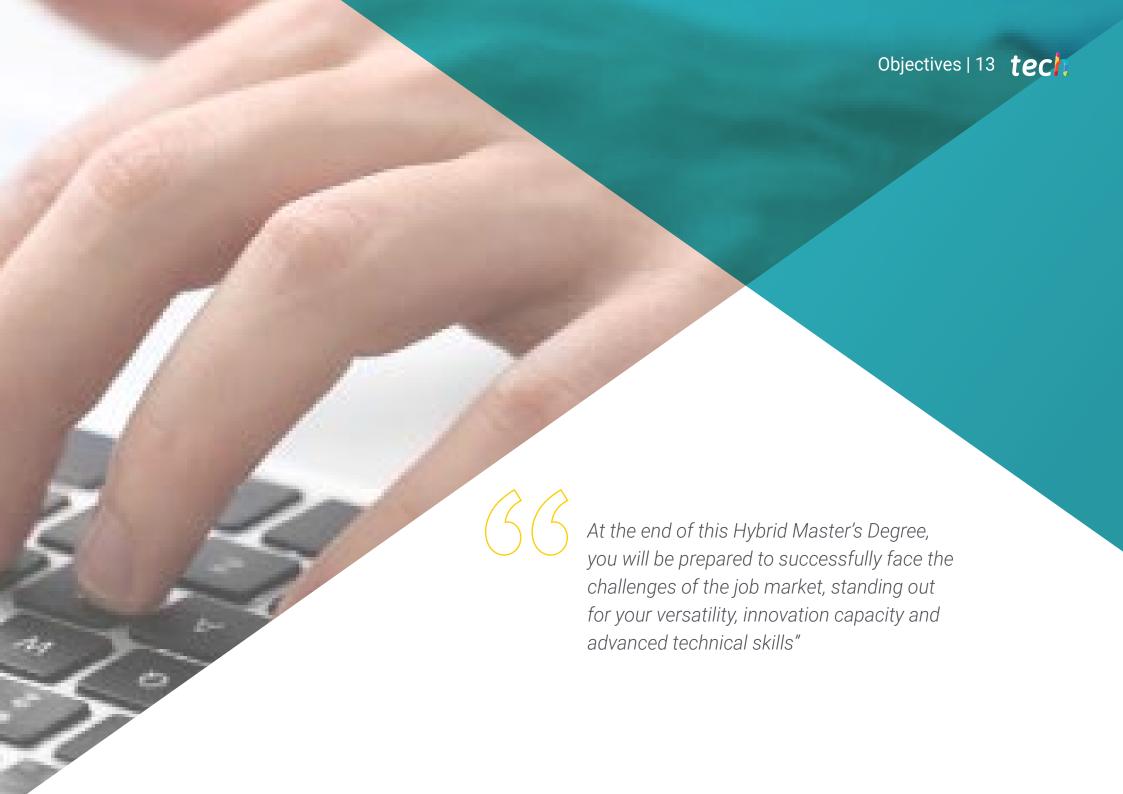
5. Opening the door to new opportunities

Full-Stack developers, with their ability to handle both the front-end and back-end of an application, are highly valued for their versatility and efficiency in creating end-to-end solutions. This complete mastery allows them to work on a variety of projects, from innovative startups to large technology corporations, and adapt to different roles, whether as a developer, software architect or technical lead. Therefore, with the increasing focus on digitization and digital transformation, Full-Stack developers are in a privileged position to take advantage of these opportunities and advance their careers.









tech 14 | Objectives



General Objective

The overall objective of the Hybrid Master's Degree in Front-End Full-Stack Developer
Programming is to provide specialized knowledge in key aspects of programming,
focusing on the essential fundamentals of the web, including the correct syntax of
HTML and CSS languages. In addition, professionals will be trained to develop any
type of application using JavaScript, including the use of the Bootstrap library and the
implementation of layout projects with SaSS. Advanced skills will also be developed in
the use of modern frameworks, such as React and Angular, exploring the potential of the
NodeJS language



You will manage relational and nonrelational databases, essential for data storage and manipulation, at the hands of the best digital university in the world, according to Forbes: TECH"





Specific Objectives

Module 1. Full Stack Developer Development

- Develop advanced programming knowledge
- Promote the use of version control systems and code hosting platforms
- Promote the use of Agile Methodologies
- Delve into the key concepts and operation of the Internet
- Increase command line proficiency

Module 2. Front-End Programming

- Identify and understand the correct syntax of HTML and CSS
- Explore the various elements of HTML
- Determine the adaptive design approach
- Employ presentation formatting to web pages by applying cascading style sheets
- Incorporate CSS preprocessor
- Establish the benefits of using a preprocessor
- Generate specialized knowledge about design systems
- Establish design system usage criteria



tech 16 | Objectives

Module 3. 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 4. Web Layout Applied to Full-Stack Developer

- Evaluate a web design to know how to place it temporally
- Examine the main CSS rules
- Present different CSS methodologies to obtain Responsive layouts
- Fundamentals of CSS waterfall development principles
- Identify the Bootstrap technology in any web design
- Analyze Bootstrap principles
- Develop a web mockup using Bootstrap
- Determine the development principles in a SaSS project

Module 5. JavaScript Tools. ReactJs Library

- Determine React functionalities
- Configure a project using Create React App
- Analyze the life cycle of components in React
- Generate specialized knowledge about modern React , features such as Hooks and Context
- Set global states using context
- Create and render lists and create forms with React
- Implement field validation in forms
- Stylize components and elements
- Debugging, testing and deploying React applications

Module 6. JavaScript Framework. Angular

- Develop specialized knowledge about the architecture of the Framework
- Delve into Angular methodology
- Analyze the concept of components
- Organize the code correctly

Module 7. Programming in NodeJs Language

- Generate specialized knowledge about JavaScript types and their operators
- Analyze the best ways to program with the language
- Update knowledge to the latest versions
- Explore functional programming
- Develop asynchronous programming and its motivation
- Acquire the ability to build an application with Node.js

Module 8. Databases for Full Stack Developers

- Determine why to use a database in application development
- Examine the types of databases available and their differences
- Develop a clear idea of what to use each type of database for
- Analyze the use of database in current development paradigms

Module 9. UX CX. Customer Experience

- Analyze the importance of the user today and delve into the feedback culture
- Specify omnichannel strategies and personalization based on micro-interactions
- Study the evolution of web analytics to behavioral analytics

- Determine how Artificial Intelligence has taken CX to the next level
- Establish the most important web experience, mobility and accessibility analytics techniques
- Present the Design Thinking methodology and the user experience creation process
- Present concrete prototyping and wireframing tools, as well as front-end development frameworks

Module 10. Continuous Integration and Application Deployment

- · Realize the benefits of adopting an automated application deployment model
- Establish the differences between continuous integration, continuous delivery and continuous deployment
- Determine the main features of DevOps
- Assess some of the fundamental tools for implementing CI/CD pipelines
- Develop the essential factors for developing applications ready to support CI/ CD processes
- Examine container technologies as a fundamental pillar of CI/CD practice

04 Skills

The key skills of this academic degree will include the ability to design and develop complete web applications, using advanced front-end and back-end technologies such as HTML, CSS, JavaScript, React, Angular and Node.j. In this way, computer scientists will also acquire skills in the implementation of UX/UI practices to improve user experience and database integration for efficient data management in applications. In addition, emphasis will be placed on the use of agile methodologies and CI/CD tools to ensure continuous delivery and constant improvement of digital products.





You will delve into DevOps practices, ensuring the efficient and secure deployment and maintenance of applications, thanks to an extensive library of multimedia resources"

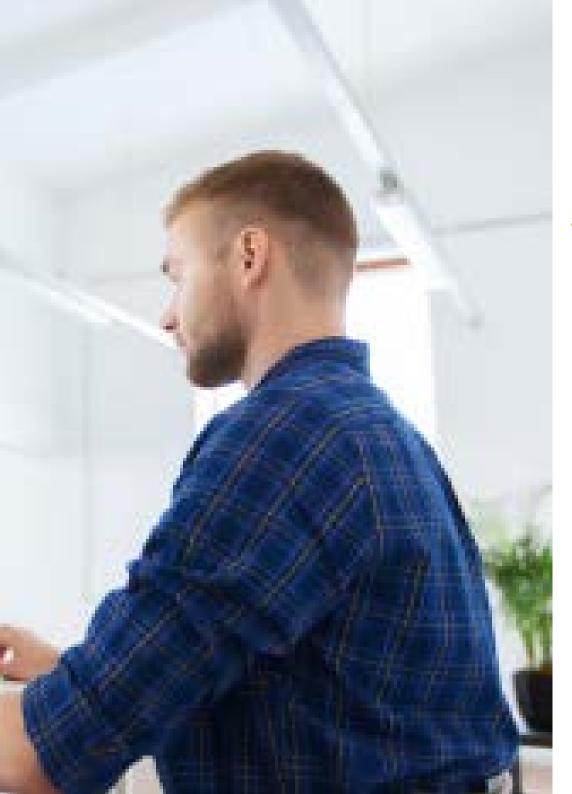
tech 20 | Skills



General Skills

- Correctly recognize the syntax of HTML and CSS languages
- Develop best practice criteria for web development
- Generate specialized knowledge about the JavaScript language
- Be able to develop any type of application with JavaScript
- Analyze the Bootstrap library
- Carry out layout projects with SaSS (Syntactically Awesome Stylesheets)
- Identify React syntax and how to program using it
- Apply best practices to the language
- Examine the loading and accessing process in each of the leading database types in your field
- Assess the most important tools and techniques in CX analysis and the common enterprise technology stack







Specific Skills

- Analyze different data structures
- Examine algorithm design and interpretation techniques
- Prepare the development environment
- Clone a website
- Generate a website with Bootstrap
- Compile CSS code with SaSS
- Develop your own Bootstrap-based CSS Framework using SaSS
- Generate a project and get it up and running
- Establish how to connect to and load/extract data from different database types
- Identify practices, use cases, technologies and tools from the CI/CD ecosystem, essential to support the overall process





tech 24 | Course Management

Management



Mr. Olalla Bonal, Martín

- Senior Blockchain Practice Manager at EY
- Blockchain Client Technical Specialist for IBM
- Director of Architecture for Blocknitive
- Team Coordinator in Non-Relational Distributed Databases for WedolT, a subsidiary of IBM
- Infrastructure Architect at Bankia
- Head of Layout Department at T-Systems
- Department Coordinator for Bing Data España SL

Professors

Mr. Calzada Martínez, Jesús

- Senior Software Engineer at Devo
- Full Stack Developer at Blocknitive
- Front-End Developer at Infinia
- Full Stack Developer at Resem
- Java Developer at Hitec
- $\bullet\,$ Graduate in Computer Engineering from the Complutense University of Madrid

Mr. Frias Favero, Pedro Luis

- Lead Blockchain Architect at EY
- Co-founder and Technical Director of Swear IT Technologies
- IT Support Director for Key Business One. Mexico, Colombia and Spain
- Degree in Industrial Engineering from Yacambú University
- Expert in Blockchain and decentralized applications from Alcalá University

Mr. Reyes Oliva, Luis

- Software and Cloud Architect
- Development Developer and Cloud Architect at IBM
- Technical client manager for integrated accounts for BBVA at IBM
- Cloud and DevOps Architect at IBM
- Customer Software Architect at Telefónica.
- Technical Solutions Architect at Rational
- Software Engineering Manager at Borland
- Project Manager at Altana Consulting
- Degree in Computer Engineering from the Pontifical University of Salamanca.

Mr. Pintado San Claudio, Bruno

- Development Coordinator at IDavinci
- Java Developer at the National Library of Spain
- Support developer and N1 network technician in Sanitas
- · Systems support technician at Alcobendas City Council
- Communications Technician N1 for ADIF at the Atocha Telecommunications Center
- Graduated in Telecommunications Technical Engineering with specialization in Electronic Systems at the Polytechnic University of Valencia
- Graduate in Communications Electronics Engineering at the Polytechnic University of Madrid

Mr. Gómez Rodríguez, Antonio

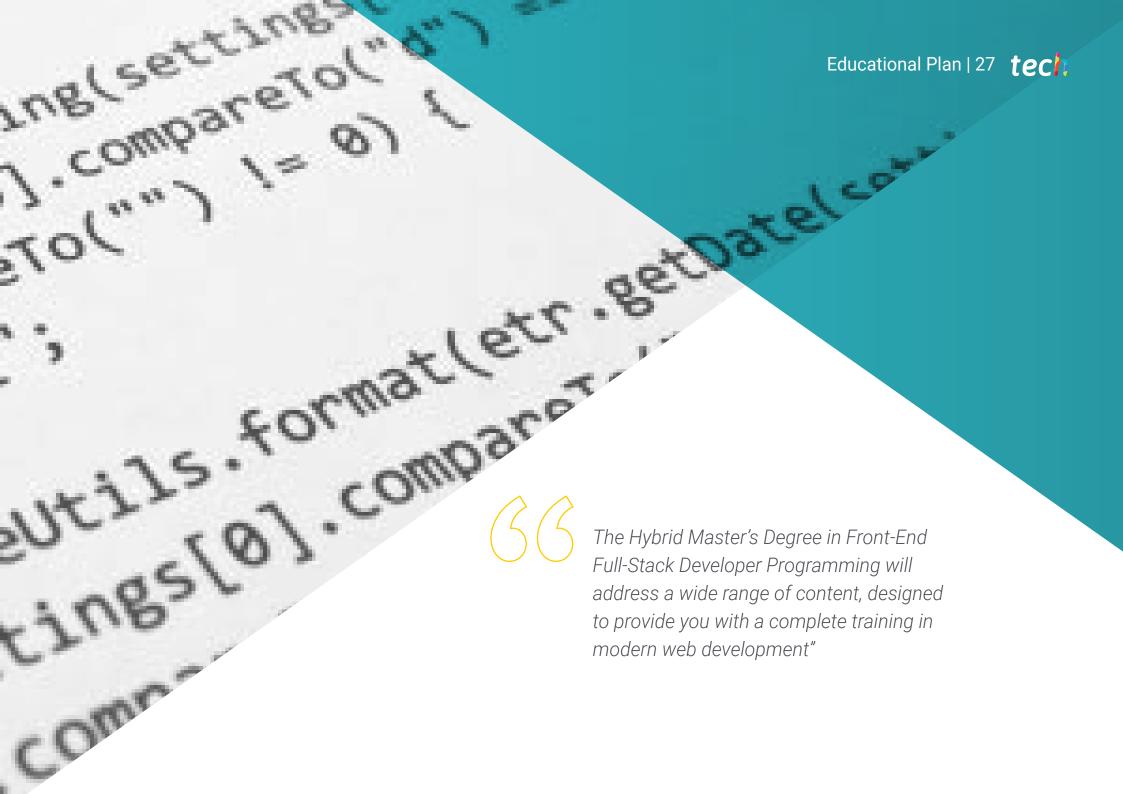
- Principal Cloud Solutions Engineer for Oracle
- Co-organizer of Málaga Developer Meetup
- Specialist Consultant for Sopra Group and Everis
- Team Leader at System Dynamics
- Software Developer at SGO Software
- Master's Degree in E-Business from from La Salle Business School
- Postgraduate degree in Information Technologies and Systems from the Catalan Institute of Technology
- Degree in Telecommunications Engineering from the Polytechnic University of Catalonia

Mr. Guerrero Díaz-Pintado, Arturo

- Director of Customer Experience for IBM
- Technical Pre-Sales Engineer through Watson Customer Engagement portfolio
- R&D Network Engineer at Telefónica
- Degree in Telecommunications Engineering from the University of Alcalá and the Danish Technical University

06 Educational Plan

The contents of the program will cover from the essential fundamentals, such as HTML, CSS and JavaScript, to advanced technologies, such as React, Angular and Node. js, for the front-end and back-end development of web applications. In this way, you will delve into web layout, interface design and the implementation of UX/UI practices to optimize the user experience. In addition, continuous integration techniques and application deployment (CI/CD), as well as the efficient management of databases and the application of agile methodologies for project management.



tech 28 | Educational Plan

Module 1. Full-Stack Developer Development

- 1.1. Full Stack Developer Development I. Programming and Languages
 - 1.1.1. Programming
 - 1.1.2. Programming Roles
 - 1.1.3. Languages and Frameworks
 - 1.1.4. Algorythm
 - 1.1.5. Characteristics of an Algorithm
- 1.2. Full Stack Developer Development II. Typology
 - 1.2.1. Variables and Constants
 - 1.2.2. Types
 - 1.2.3. Operators
 - 1.2.4. Declarations
 - 1.2.5. Loops
 - 1.2.6. Functions and Objects
- 1.3. Data Structure in Development
 - 1.3.1. Linear Structure Types
 - 1.3.2. Functional Structure Types
 - 1.3.3. Tree Structure Types
- 1.4. Algorithm Design and Interpretation
 - 1.4.1. Parallelism in Development. Divide and Conquer
 - 1.4.2. Voracious Algorithms
 - 1.4.3. Dynamic Programming
- 1.5. Environment and Tools for Full Stack Developer Oriented Development
 - 1.5.1. Preparation of the Environment for Mac OS
 - 1.5.2. Preparation of the Environment for Linux
 - 1.5.3. Preparation of the Environment for Windows
- 1.6. Command Line. Typology and Operation
 - 1.6.1. The Terminal
 - 1.6.2. Emulators
 - 1.6.3. Command Interpreter
 - 1.6.4. First Commands
 - 1.6.5. Navigation
 - 1.6.6. Managing Files and Folders Using the Command Line Interface
 - 1.6.7. Secure Shell, SSH
 - 1.6.8. Advanced Commands

- 1.7. Git. Software Repository
 - 1.7.1. Git Software Repository
 - 1.7.2. Using Git
 - 1.7.3. Software Repository
 - 1.7.4. Branches
 - 1.7.5. Duty Cycle
 - 1.7.6. Commands
- 1.8. Code Versioning Hosting Service
 - 1.8.1. Code Versioning Hosting Service
 - 1.8.2. Suppliers
 - 1.8.3. Repositories
- 1.9. Internet
 - 1.9.1. Internet
 - 1.9.2. Protocols Used in WWW
 - 1.9.3. HTTP Protocol
- 1.10. Methodologies in Full Stack Development
 - 1.10.1. Scrum
 - 1.10.2. XP
 - 1.10.3. Design Sprint

Module 2. Front-End Programming

- 2.1. HTML Language
 - 2.1.1. HTML Document
 - 2.1.2. Head Element
 - 2.1.3. Body Element
 - 2.1.4. Text:
 - 2.1.5. Hyperlinks
 - 2.1.6. Images
 - 2.1.7. First Site
- 2.2. HTML Language. Layouts
 - 2.2.1. HTML Language. Components
 - 2.2.2. Traditional Layout
 - 2.2.3. Semantic Layout

- 2.3. Cascading Style Sheets CSS
 - 2.3.1. Inclusion of CSS in an HTML Document
 - 2.3.2. Comments
 - 2.3.3. Selectors
 - 2.3.4. Advanced Selectors
- 2.4. CSS (Cascading Style Sheets) Properties
 - 2.4.1. Color
 - 2.4.2. Text:
 - 2.4.3. Pseudo Classes
 - 2.4.4. Transitions
 - 2.4.5. Animations
 - 2.4.6. Animation of Elements
 - 2.4.7. Advanced Animation
- 2.5. Box Models
 - 2.5.1. Height and Width
 - 2.5.2. Margin
 - 2.5.3. Filling
- 2.6. Positioning
 - 2.6.1. Static Positioning
 - 2.6.2. Relative Positioning
 - 2.6.3. Absolute Positioning
 - 2.6.4. Fixed Positioning
 - 2.6.5. Floats
- 2.7. Adaptive Design
 - 2.7.1. Viewport
 - 2.7.2. Media Queries
 - 2.7.3. CSS Units
 - 2.7.4. Images
 - 2.7.5. Frameworks
- 2.8. Modern Layout
 - 2.8.1. Flex
 - 2.8.2. Grid
 - 2.8.3. Flex Vs. Grid

- 2.9. Pre-Processing
 - 2.9.1. Sass
 - 2.9.2. Variables
 - 2.9.3. Mixins
 - 2.9.4. Loops
 - 2.9.5. Functions
- 2.10. System Design
 - 2.10.1. Bootstrap
 - 2.10.2. Bootstrap Grid
 - 2.10.3. Header and Footer of Our Site
 - 2.10.4. Forms
 - 2.10.5. Cards
 - 2.10.6. Modals

Module 3. Javascript Language Applied to Full-Stack Developer

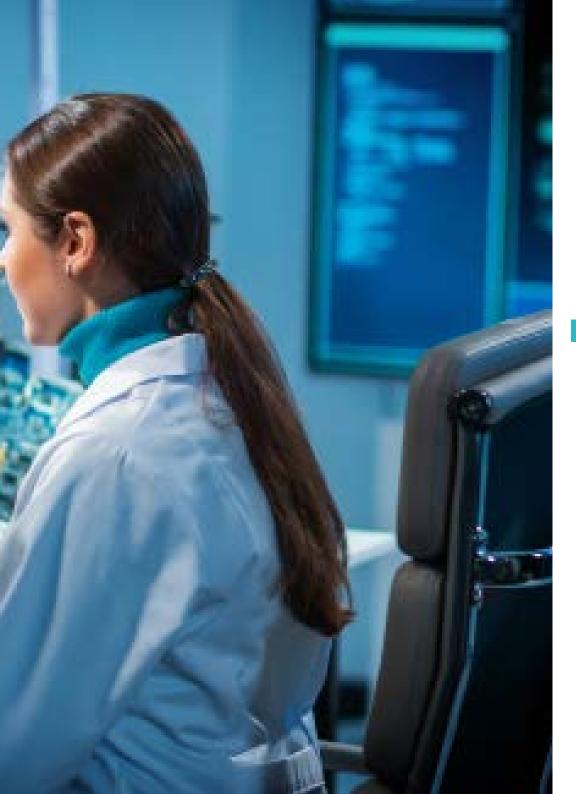
- 3.1. Primitive Types and Operators
 - 3.1.1. JavaScript Language
 - 3.1.2. Numbers and Their Operators
 - 3.1.3. Text Strings and Their Operators
 - 3.1.4. Boolean Values
 - 3.1.5. Conversion Between Types
- 3.2. Flow Controllers and Structure
 - 3.2.1. Expressions and Statements
 - 3.2.2. Variables and Constants
 - 3.2.3. If Statement
 - 3.2.4. For, While Statements
- 3.3. Functions
 - 3.3.1. Functions
 - 3.3.2. Parameters
 - 3.3.3. Functions as Parameters
 - 3.3.4. Scope of Variables
 - 3.3.5. Nested Scopes
 - 3.3.6. Hoisting
 - 3.3.7. Closures
 - 3.3.8. Recursion

tech 30 | Educational Plan

- 3.4. Data Structures: Objects
 - 3.4.1. Object Type
 - 3.4.2. Creation of Objects
 - 3.4.3. Accessing the Values of an Object
 - 3.4.4. Adding or Deleting Properties
 - 3.4.5. Nested Objects
 - 3.4.6. Destructuring Objects
 - 3.4.7. Object Type Methods
 - 3.4.8. Spread Operator
 - 3.4.9. Immutability
- 3.5. Data Structures: Array
 - 3.5.1. Data Structure. Array
 - 3.5.2. Array. Typology
 - 3.5.3. Nested Arrays
 - 3.5.4. Methods of an Array
- 3.6. OOP: Prototype and Classes
 - 3.6.1. OOP: Object Oriented Programming
 - 3.6.2. Prototypes
 - 3.6.3. Classes
 - 3.6.4. Private Data
 - 3.6.5. Subclasses
 - 3.6.6. Call and Apply
- 3.7. JavaScript Types
 - 3.7.1. Set
 - 3.7.2. WeakSet
 - 3.7.3. Map
 - 3.7.4. WeakMap
 - 3.7.5. Common Expressions
- 3.8. JavaScript Utilities
 - 3.8.1. Date
 - 3.8.2. Math
 - 3.8.3. Symbol
 - 3.8.4. JSON







- 3.9. JavaScript in the Browser
 - 3.9.1. Inclusion of JavaScript in a Website
 - 3.9.2. DOM
 - 3.9.3. Events
 - 3.9.4. Browser Storage
- 3.10. Asynchronous Programming
 - 3.10.1. Asynchronous Programming
 - 3.10.2. Event Loop
 - 3.10.3. Callbacks
 - 3.10.4. Promises
 - 3.10.5. Async / Await

Module 4. Web Layout Applied to Full-Stack Developer

- 4.1. CSS and Layout
 - 4.1.1. Layout with Tables
 - 4.1.2. Fluid Layout
 - 4.1.3. The Responsive Era
 - 4.1.4. Mobile First Vs. Desktop First
- 4.2. CSS and the Rules of Web Design
 - 4.2.1. Selectors
 - 4.2.2. Pseudo Classes
 - 4.2.3. Pseudo Elements
- 4.3. Layout with CSS
 - 4.3.1. Box Model Rules
 - 4.3.2. Typographies
 - 4.3.3. Colors
 - 4.3.4. Images
 - 4.3.5. Backgrounds
 - 4.3.6. Tables
 - 4.3.7. Forms
 - 4.3.8. Showing and Hiding Elements
 - 4.3.9. CSS Variables

tech 32 | Structure and Content

44	Responsive Design and Fluid Design	
		Floating Elements
		CSS Grid
		Media Queries
		Flex Box
4.5.		
		Priority of CSS Rules
		Overwriting Rules
		Classes vs Identifiers
4.6.		
		Software as a Service (SaSS)
		SaSS Installation
		Running and Compiling SaSS
	4.6.4.	
4.7.	Using SaSS	
	_	Variables in Sass
	4.7.2.	Modularization of Our Project
	4.7.3.	SaSS Syntax
4.8.	SaSS Logic	
	4.8.1.	Mixins
	4.8.2.	Maps
	4.8.3.	Functions and Control Structures
4.9.	Layout with Bootstrap	
	4.9.1.	Bootrstrap
	4.9.2.	Bootstrap Layout
	4.9.3.	Forms
	4.9.4.	Box Model with Bootstrap
	4.9.5.	Colors and Fonts
	4.9.6.	Links and Buttons
	4.9.7.	Showing and Hiding Elements with Bootstrap
	4.9.8.	Flex Box with Bootstrap

4.9.9. Components

- 4.10. Theming Bootstrap
 - 4.10.1. Rewriting Bootstrap with SaSS (Software as a Service)
 - 4.10.2. File Structure
 - 4.10.3. Creating our Own CSS Framework (Cascading Style Sheets)

Module 5. Javascript Tools. Reactjs Library

- 5.1. ReactJS Javascript Tool
 - 5.1.1. The ReactJS Tool
 - 5.1.2. Create React App
 - 5.1.3. JavaScript Syntax Extension
- 5.2. ReactJS Components
 - 5.2.1. Components
 - 5.2.2. Props
 - 5.2.3. Rendering
- 5.3. Events in the ReactJS Library
 - 5.3.1. Event Handling
 - 5.3.2. Inline Event Handling
 - 5.3.3. Events in the ReactJS Library
- 5.4. Configuring ReactJS Hooks
 - 5.4.1. Status of a Component
 - 5.4.2. Status Hook
 - 5.4.3. Hook Effect
 - 5.4.4. Custom Hooks
 - 5.4.5. Other Hooks
- 5.5. Context Component in ReactJS
 - 5.5.1. Context Component in ReactJS
 - 5.5.2. Using Context
 - 5.5.3. Context Structure
 - 5.5.4. React Create Context
 - 5.5.5. Context. Provider

- 5.5.6. Class. Context Type
- 5.5.7. Context. Consumer
- 5.5.8. Context.displayName
- 5.5.9. Practical Application of Context Usage
- 5.6. Routing in ReactJs
 - 5.6.1. Router
 - 5.6.2. React router
 - 5.6.3. Installation
 - 5.6.4. Basic Routing
 - 5.6.5. Dynamic Routing
 - 5.6.6. Primary Components
 - 5.6.7. React Router Hooks
- 5.7. Using Lists and Forms with ReactJS
 - 5.7.1. Lists and Loops
 - 5.7.2. Forms and Validations
 - 5.7.3. Rect Hook Forms
- 5.8. Using Styles in ReactJS
 - 5.8.1. Traditional Styling
 - 5.8.2. Inline Styling
 - 5.8.3. Addition of Design System Library
- 5.9. Performing Tests in Javascript. Tools
 - 5.9.1. Testing
 - 5.9.2. Jest JavaScript Testing Framework
 - 5.9.3. Visual Testing and Documentation
- 5.10. Deploying Code with ReactJS
 - 5.10.1. Hosting
 - 5.10.2. Suppliers
 - 5.10.3. Project Preparation
 - 5.10.4. Deployment on Heroku

- Module 6. JavaScript Framework. Angular
- 6.1. The Angular Framework and its Architecture
 - 6.1.1. Angular CLI
 - 6.1.2. Architecture
 - 6.1.3. Workspace and Structure
 - 6.1.4. Environment
- 6.2. Angular Framework Components
 - 6.2.1. Life Cycle
 - 6.2.2. View Encapsulation
 - 6.2.3. Interaction Between Components
 - 6.2.4. Content Projection
- 6.3. Angular Framework Templates
 - 6.3.1. Text Interpolation
 - 6.3.2. Declarations
 - 6.3.3. Property Binding
 - 6.3.4. Class, Style and Attribute Binding
 - 6.3.5. Event Binding and Two-Way Binding
 - 6.3.6. Pipes
- 6.4. Angular Framework Directives
 - 6.4.1. Angular Directives
 - 6.4.2. Attribute Directives
 - 6.4.3. Structure Directives
- 6.5. Services and Dependency Injection
 - 6.5.1. Services
 - 6.5.2. Dependency Injection
 - 6.5.3. Service Providers
- 6.6. Routing and Navigation
 - 6.6.1. Application with Routing
 - 6.6.2. Basic Routing
 - 6.6.3. Nested Routes
 - 6.6.4. Parameters
 - 6.6.5. Access and Authorization
 - 6.6.6. Lazy Loading of Modules

tech 34 | Educational Plan

- 6.7. RxJS
 - 6.7.1. Observables
 - 6.7.2. Observers
 - 6.7.3. Subscriptions
 - 6.7.4. Operators
- 6.8. Forms and HTTP
 - 6.8.1. Reactive Forms
 - 6.8.2. Field Validation
 - 6.8.3. Dynamic Forms
 - 6.8.4. Requests
 - 6.8.5. Interceptors
 - 6.8.6. Security/Safety
- 6.9. Animations
 - 6.9.1. Transitions and Triggers
 - 6.9.2. Path Transitions
 - 6.9.3. Differences Between Transitions
- 6.10. Testing in the Angular Framework
 - 6.10.1. Testing Services
 - 6.10.2. Component Testing
 - 6.10.3. Testing of Directives and Pipelines

Module 7. Programming in NodeJs Language

- 7.1. NodeJS and its Architecture
 - 7.1.1. NPM and Package Management
 - 7.1.2. Executing a Program
 - 7.1.3. Modules
 - 7.1.4. Creating a Module
 - 7.1.5. Loop of Events
- 7.2. Backend, HTTP, Express and Sockets Server
 - 7.2.1. Module HTTP
 - 7.2.2. Express
 - 7.2.3. Socket.io

- 7.3. Database and Cache
 - 7.3.1. MongoDB
 - 7.3.2. Mongoose
 - 7.3.3. SQL
 - 7.3.4. Sequelize
 - 7.3.5. Redis
- 7.4. File System and Os
 - 7.4.1. File System Module
 - 7.4.2. Os Module
 - 7.4.3. Cluster module
- 7.5. Events, Buffers and Streams
 - 7.5.1. Events
 - 7.5.2. Buffers
 - 7.5.3. Streams
- 7.6. Testing
 - 7.6.1. Jest
 - 7.6.2. Mocha
 - 7.6.3. TDD Cucumber
- 7.7. Architecture and Good Practices
 - 7.7.1. DRY
 - 7.7.2. SOLID
 - 7.7.3. CRUD
 - 7.7.4. MVC
 - 7.7.5. Monoliths
 - 7.7.6. Microservices
 - 7.7.7. Hexagonal Architecture
- 7.8. Typescript
 - 7.8.1. Types, Interfaces and Classes
 - 7.8.2. Functions and Modules
 - 7.8.3. Generics
 - 7.8.4. Namespaces
 - 7.8.5. Decorators

- 7.9. API REST
 - 7.9.1. Get
 - 7.9.2. Post
 - 7.9.3. Put
 - 7.9.4. Delete
 - 7.9.5. Swagger
 - 7.9.6. Building a REST API with Express
- 7.10. Creation and Containerization of an Application with NestJS
 - 7.10.1. Nest CLI
 - 7.10.2. Docker
 - 7.10.3. Building an Application

Module 8. Databases for Full-Stack Developers

- 8.1. Databases for Full-Stack Developers
 - 8.1.1. Database within Application Development
 - 8.1.2. Database Capabilities
 - 8.1.3. SQL (Structured Query Language)
- 8.2. Choice of Database
 - 8.2.1. Application or Service to be Considered
 - 8.2.2. Database Categories
 - 8.2.3. Database Overview
- 8.3. Development with MySQL
 - 8.3.1. Development with MySQL
 - 8.3.2. Deployment of Relational Model with MySQL
 - 8.3.3. Connection to MySQL
- 8.4. Development with Oracle Database
 - 8.4.1. Development with Oracle DB
 - 8.4.2. Model Deployment
 - 8.4.3. Connection to Oracle Database
- 8.5. Development with Oracle SQL Server
 - 8.5.1. Oracle SOL Server
 - 8.5.2. Model Deployment
 - 8.5.3. Connection to SOL Server

- 8.6. Development with NoSQL
 - 8.6.1. Comparison with SQL Databases
 - 8.6.2. Database Creation in MongoDB
 - 8.6.3. Connection to MongoDB
- 8.7. Development with Graphs
 - 8.7.1. Development with Graphs
 - 8.7.2. Database Creation with Neo4j
 - 8.7.3. Connection with Neo4i
- 8.8. Development with Key-Value Database
 - 8.8.1. Development with K-V Database
 - 8.8.2. Database Creation with Redis
 - 8.8.3. Connection with Redis
- 8.9. Databases with Other Data Types
 - 8.9.1. Elastic Search
 - 8.9.2. Immemory Database
 - 3.9.3. Development with Spatial Data
- 8.10. Database. Advanced Aspects
 - 8.10.1. Databases in Cloud Native Development
 - 8.10.2. Databases in Microservices Architecture
 - 8.10.3. CI/CD and Databases

Module 9. UX CX. Customer Experience

- 9.1. Customer Experience
 - 9.1.1. Customer Experience (CX)
 - 9.1.2. New Consumer Needs
 - 9.1.3. Feedback in Customer Experience
- 9.2. Innovative Technologies
 - 9.2.1. Thinking Machines
 - 9.2.2. New Ways of Sharing Information
 - 9.2.3. Measuring What Cannot Be Measured
- 9.3. Channels of Interaction with the User
 - 9.3.1. Customer Analysis
 - 9.3.2. Personalization
 - 9.3.3. Multiple User Interaction Channels

tech 36 | Educational Plan

- 9.4. User Analytics
 - 9.4.1. Web Structure
 - 9.4.2. User Analytics
 - 9.4.3. Advanced User Analytics
- 9.5. Nielsen and its Impact on CX
 - 9.5.1. Nielsen and its Impact on CX
 - 9.5.2. User Testing Techniques
- 9.6. Customer Experience Tools
 - 9.6.1. Advanced Tools
 - 9.6.2. Mobility
 - 9.6.3. Accessibility
- 9.7. New Methodologies
 - 9.7.1. The User's Challenge
 - 9.7.2. UX Process
 - 9.7.3. User Research
- 9.8. Communication of a Design
 - 9.8.1. Wireframing
 - 9.8.2. Design Communication Tools
 - 9.8.3. Advanced Design Communication Tools
- 9.9. UI design
 - 9.9.1. UI design
 - 9.9.2. Web and Mobile Interfaces
 - 9.9.3. Web and Mobile Components
- 9.10. Elaboration of a CX
 - 9.10.1. Elaboration of a CX
 - 9.10.2. Design of New Experiences
 - 9.10.3. Interfaces

Module 10. Continuous Integration and Application Deployment

- 10.1. Continuous Integration and Continuous Deployment: CI/CD
 - 10.1.1. Use of Continuous Integration and Continuous Deployment (CI/CD)
 - 10.1.2. Differences Between Continuous Integration and Continuous Deployment (CI/CD)
 - 10.1.3. Continuous Integration and Continuous Deployment. Benefits of CI/CD
- 10.2. New Development Paradigms
 - 10.2.1. From Waterfall to DevOps
 - 10.2.2. Style Guide: The 12 Factors
 - 10.2.3. Cloud Native, Microservices and Serverless
- 10.3. DevOps, Beyond CI/CD
 - 10.3.1. DevOps.
 - 10.3.2. DevOps. Continuous Everything
 - 10.3.3. DevOps vs SRE
- 10.4. Container Technology I Docker
 - 10.4.1. Containers. Contribution
 - 10.4.2. Docker. Architecture
 - 10.4.3. Deployment Process with Docker
- 10.5. Container Technology II Kubernetes
 - 10.5.1. Orchestration
 - 10.5.2. Kubernetes
 - 10.5.3. The Kubernetes Ecosystem
- 10.6. Infrastructure Configuration with GitOps
 - 10.6.1 Immutable Infrastructure
 - 10.6.2. GitOps
 - 10.6.3. GitOps Tools
- 10.7. Pipelines and Automation. CI/CD Use Cases
 - 10.7.1. Continuous Integration
 - 10.7.2. Continuous Deployment and Delivery
 - 10.7.3. Automatic Validation
 - 10.7.4. Best Practices in CI/CD





10.8. CI/CD with Jenkins. Reference:

10.8.1. CI/CD with Jenkins

10.8.2. Jenkins Pipelines

10.8.3. Best Practices with Jenkins

10.9. CI/CD Ecosystem

10.9.1. Ecosystem Organization

10.9.2. Advanced Tools

10.9.3. Dagger. The Future

10.10. Final Phases of the CI/CD Oriented Software Cycle

10.10.1. Application of IA to the CI/CD Process

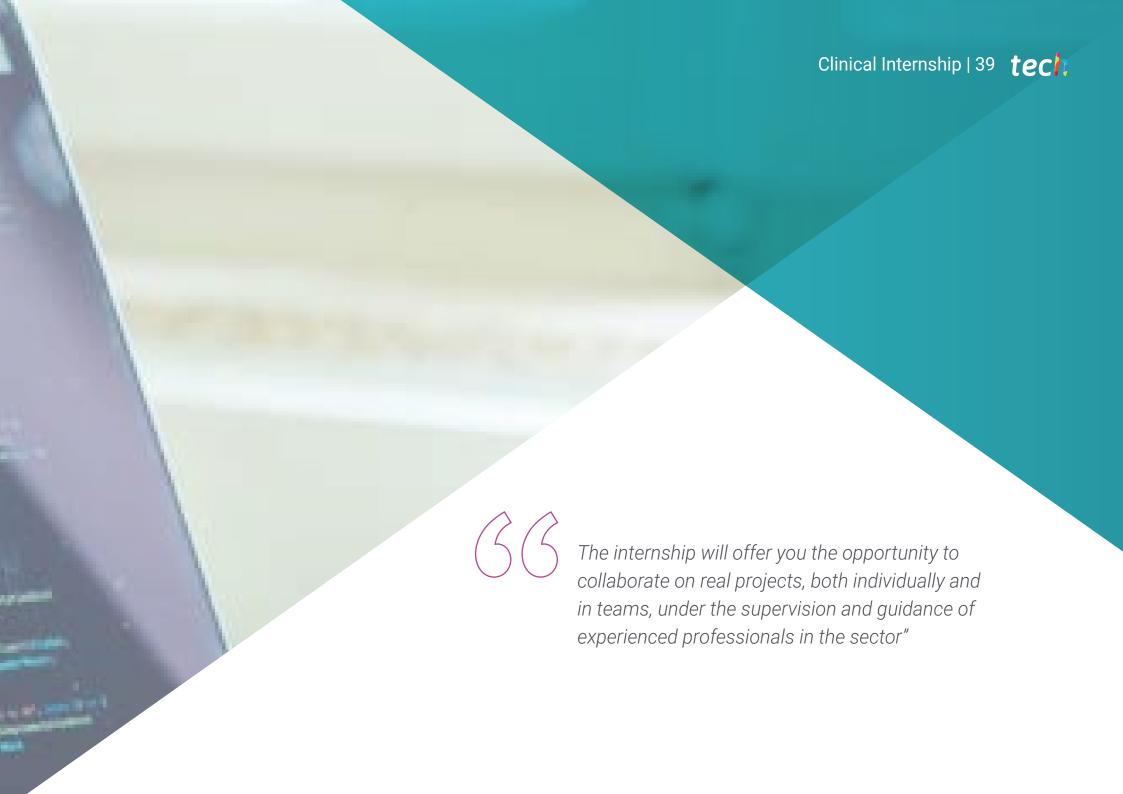
10.10.2. DevSecOps

10.10.3. Chaos Engineering



This comprehensive, hands-on approach will prepare you to successfully meet the challenges of today's job market, equipping you with the skills to develop and maintain sophisticated and functional web applications"





tech 40 | Clinical Internship

The Internship Program of this Front-End Full-Stack Developer Programming program consists of a 3-week internship in a prestigious IT company, from Monday to Friday, with 8 consecutive hours of practical training, alongside an assistant specialist. This internship will allow to work on real programming projects, alongside a team of professionals of reference in the field of intensive care nursing, applying the most innovative diagnostic procedures and planning the latest generation of therapy for each pathology.

In this training proposal, completely practical in nature, the activities are aimed at developing and perfecting the necessary skills for Front End Full Stack Developer Programming and conditions that require a high level of qualification, and are oriented to the specific training for the exercise of the activity, in an environment of patient safety and high professional performance. This is undoubtedly an opportunity to learn by working.

The practical education will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other training partners that facilitate teamwork and multidisciplinary integration as transversal competencies for the praxis of Computer Science (learning to be and learning to relate).



The procedures described below will be the basis of the practical part of the program, and their implementation will be subject to the center's own availability and workload, the proposed activities being the following:

Module	Practical Activity
Interface Design and Development	Create intuitive and attractive user interfaces
	Implement responsive designs that adapt to different devices and screen sizes
	Use design and prototyping tools such as Adobe XD, Figma or Sketch
	Perform usability testing to ensure an optimal user experience
Web Application Development	Develop web applications using front-end technologies such as HTML, CSS and JavaScript
	Use frameworks and libraries such as React, Angular or Vue.js
	Integrate APIs and external services to enrich application functionalities
	Optimize the performance of web applications for a better user experience
Project Management and Teamwork	Use agile methodologies such as Scrum or Kanban to manage projects
	Collaborate with designers, developers and other team members
	Participate in code reviews and provide constructive feedback
	Manage version control using tools such as Git and GitHub
Back-End Development and Databases	Develop and maintain servers and databases using Node.js and Express
	Design and manage relational and non-relational databases such as MySQL, PostgreSQL, and MongoDB
	Implement and secure RESTful APIs for communication between the front-end and back-end
	Manage user authentication and authorization in web applications

Module	Practical Activity
Testing and Debugging	Write and execute unit and integration tests using tools such as Jest, Mocha or Jasmine
	Efficiently identify and fix bugs in code
	Automate tests and deployments using CI/CD pipelines
	Perform code reviews to maintain quality standards and best practices
Security and Optimization	Implement security measures to protect web applications from threats and vulnerabilities
	Optimize web application performance, reducing loading times and improving code efficiency
	Implement SEO optimization techniques to improve visibility on search engines
	Perform security and performance audits of web applications



You'll tackle specific web development challenges, from implementing interactive layouts and functionality to database integration and performance optimization"



Civil Liability Insurance

This institution's main concern is to guarantee the safety of the students and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

- 1. TUTOR: During the Hybrid Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.
- **2. DURATION**: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.
- 3. ABSENCE: If the students does not show up on the start date of the Hybrid Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

- **4. CERTIFICATION:** Professionals who pass the Hybrid Master's Degree will receive a certificate accrediting their stay at the center.
- **5. EMPLOYMENT RELATIONSHIP:** the Hybrid Master's Degree shall not constitute an employment relationship of any kind.
- **6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.
- 7. DOES NOT INCLUDE: The Hybrid Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.





tech 46 | Where Can I Do the Internship?

The student will be able to complete the practical part of this Hybrid Master's Degree at the following centers:



Captia Ingeniería

Country Spain City Madrid

Address: Av. de las Nieves, 37, Bloque A Planta 1 Oficina E, 28935, Móstoles, Madrid

IT company dedicated to providing advanced technological solutions to industries.

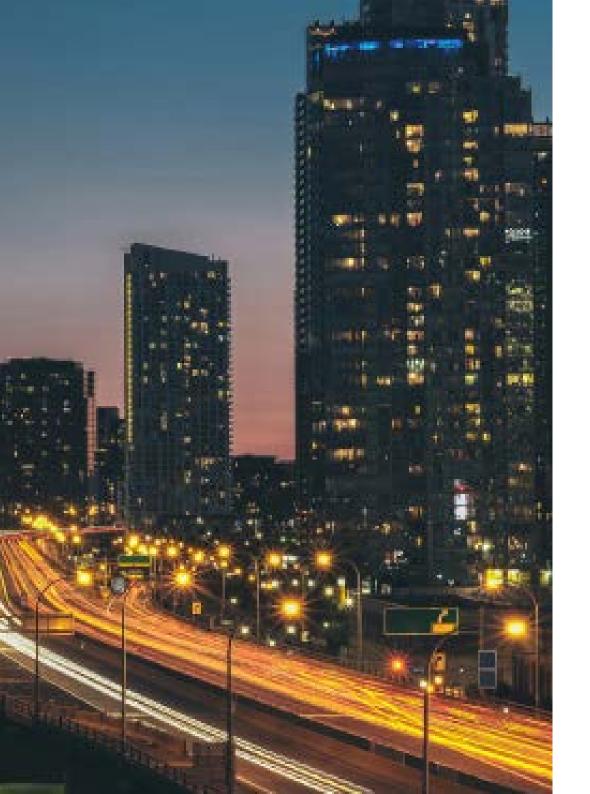
Related internship programs:

- Visual Analytics and Big Data - Software Development

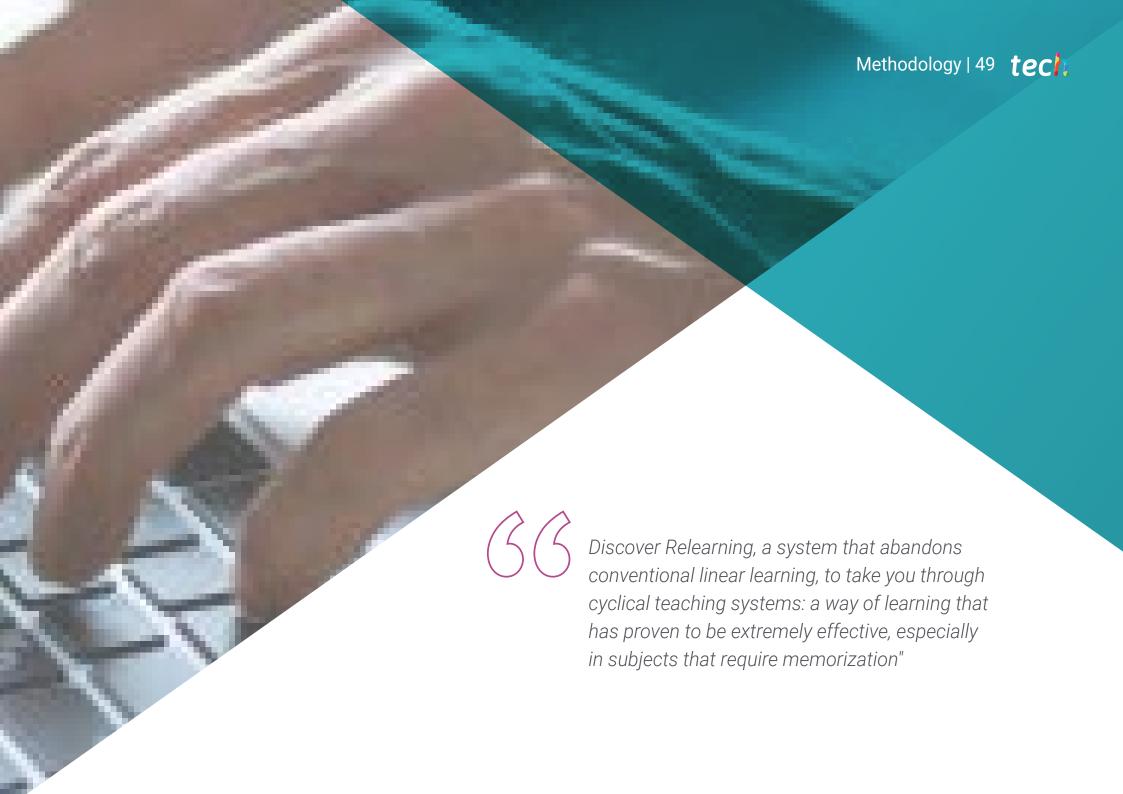




Boost your career path with holistic teaching, allowing you to advance both theoretically and practically"







tech 50 | Methodology

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.

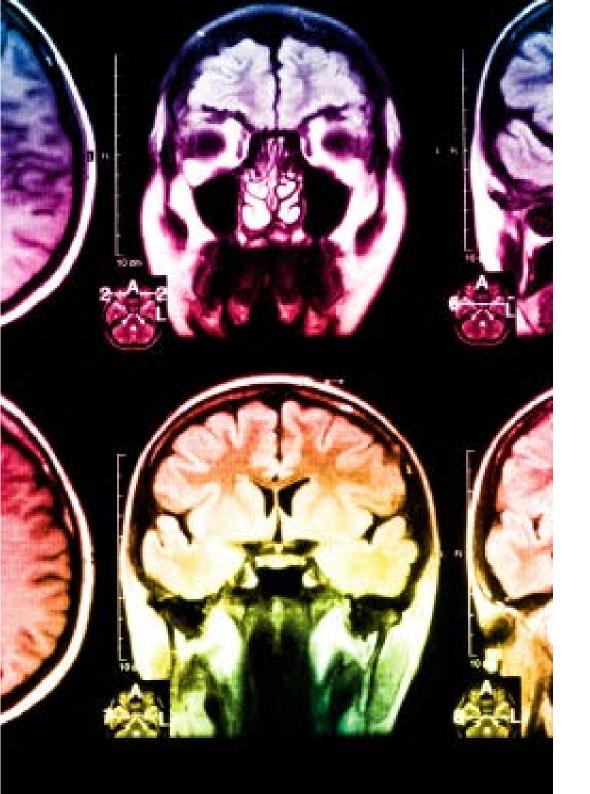
We enhance the Case Study with the best 100% online teaching method: Relearning.

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.





Methodology | 53 tech

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.



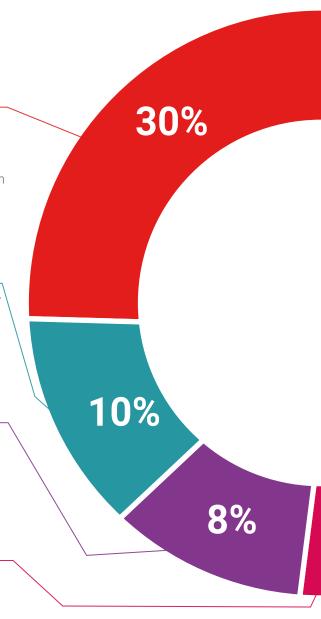
Practising Skills and Abilities

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.



20% 25% 4%

3%

Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.



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

Testing & Retesting

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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.





tech 58 | Certificate

This private qualification will allow you to obtain a **Hybrid Master's Degree in Front-End Full-Stack Developer Programming** 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.

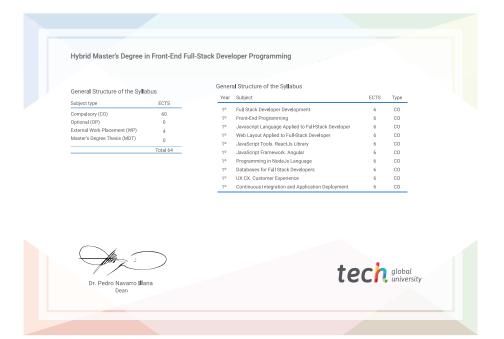
Title: Hybrid Master's Degree in Front-End Full-Stack Developer Programming

Modality: Hybrid (Online + Internship)

Duration: 12 months

Accreditation: 60 + 4 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.

health confidence people

health confidence people

education information tutors
guarantee accreditation teaching
institutions technology learning



Hybrid Master's Degree

Front-End Full-Stack
Developer Programming

Modality: Hybrid (Online + Internship)

Duration: 12 months

Certificate: TECH Global University

Accreditation: 60 + 4 ECTS

