

# Postgraduate Diploma Front-End Programming





## Postgraduate Diploma Front-End Programming

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

Website: [www.techtute.com/pk/information-technology/postgraduate-diploma/postgraduate-diploma-from-end-programming](http://www.techtute.com/pk/information-technology/postgraduate-diploma/postgraduate-diploma-from-end-programming)

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# 01

# Introduction

The presentation logic and interface design of an application is the task of the Front-End developer, who is also in charge of the interaction design or, in other words, the way in which the user interacts with the application through the browser. In this sense, in addition to knowing the different languages, frameworks and libraries needed for development, a Front-End programmer needs to have design skills to find the best way to present the information. This program will specialize the computer engineer in the latest technologies currently in use around the world, as well as in Full-Stack development.



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*With this program you will develop specialized knowledge about preprocessors, the box model, positioning, selectors, specificity, Flexbox and Grid, among others”*



Over the past few years, there has been a steady increase in the demand for IT specialists and, in particular, programmers. Front-ends use different programming languages such as HTML, CSS, and JavaScript to design web-based software solutions. These include: websites, sites for mobile devices, as well as mobile apps and progressive web apps.

The Front-End of a website is the visible part with which the user interacts directly. Therefore, the function of this program is for the programmer to acquire the necessary skills to convert an existing project into a working website and/or application. The same goes for Full-Stack Programmers, who work on both the front and back end of a website or application. With this Postgraduate Diploma you will learn all the programming languages that are currently important for software development.

A 100% online Postgraduate Diploma that provides the student with the ease of being able to study it comfortably, wherever and whenever they want. All you need is a device with an Internet connection to take your career one step further. A modality according to the current time with all the guarantees to position the programmer in a highly demanded sector.

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

- ◆ Case studies presented by experts in Full-Stack Front-End 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
- ◆ 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



*Develop specialized knowledge on the most advanced tools and methodologies to build any web solution"*

“

*Address agile methodologies and develops the latest versions of the most advanced tools to perform complete application development”*

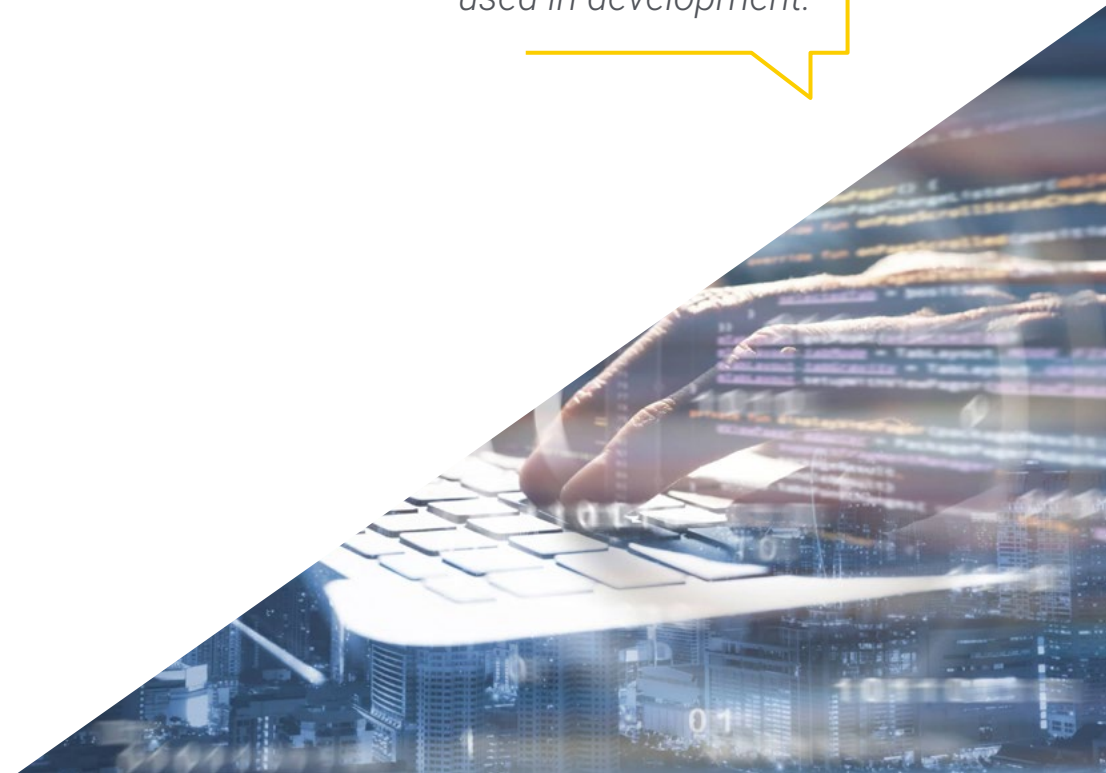
*Establishes and develops the phases of Full Stack development, from programming to the key concepts of continuous integration.*

*Examines NodeJS for backend solutions and the various databases used in development.*

The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

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



# 02 Objectives

This Postgraduate Diploma has a series of general and specific objectives that guide the achievement of the most important goal, which is that the professional can obtain the necessary knowledge to efficiently master the Front-End programming process by developing a 360-degree vision of the entire process of building an application. For this, TECH provides a broad and specialized theoretical and practical knowledge that allows understanding the development of projects from an optimized perspective.





“

*Specializing in your area is possible with an intelligent study method, flexible and effective learning. Learn about all the advantages of learning with TECH”*



## General Objectives

- ◆ Generate specialized knowledge on key aspects of programming
- ◆ Encourage algorithmic thinking
- ◆ Provide the necessary tools and skills for development
- ◆ Promote the adoption of agile methodologies for project execution
- ◆ Develop specialized knowledge on the fundamentals of the Web
- ◆ Encourage the use of modern *Front-End* development tools and techniques
- ◆ Correctly recognize the syntax of HTML and CSS languages
- ◆ Develop Web Development Best Practices criteria
- ◆ 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
- ◆ Assess the knowledge acquired





## Specific Objectives

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### Module 1. Full Stack Developer

- ◆ Develop advanced programming knowledge
- ◆ Analyze different data structures
- ◆ Examine algorithm design and interpretation techniques
- ◆ Prepare the development environment
- ◆ 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
- ◆ Clone website
- ◆ Generate a website with Bootstrap

### 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

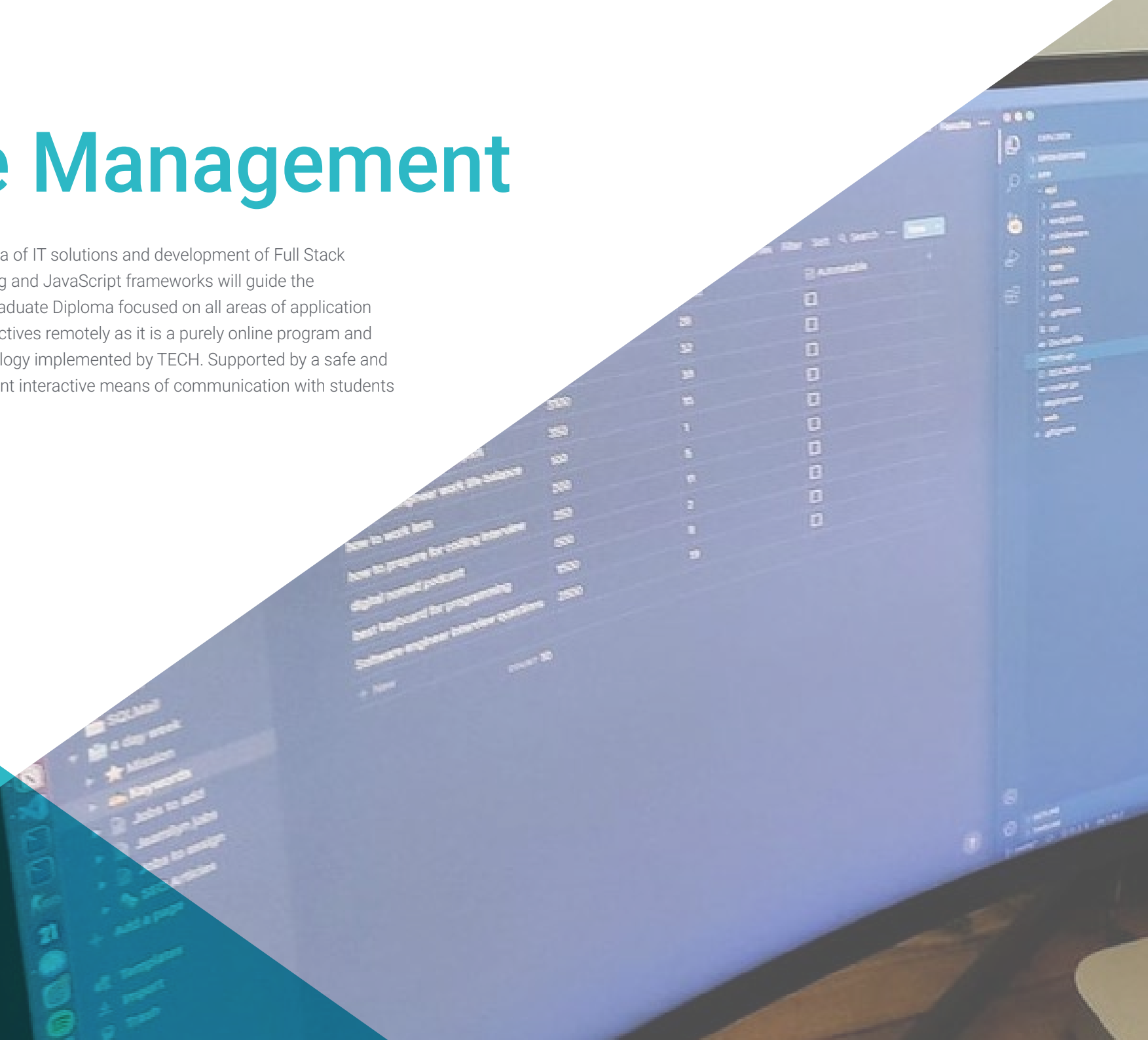


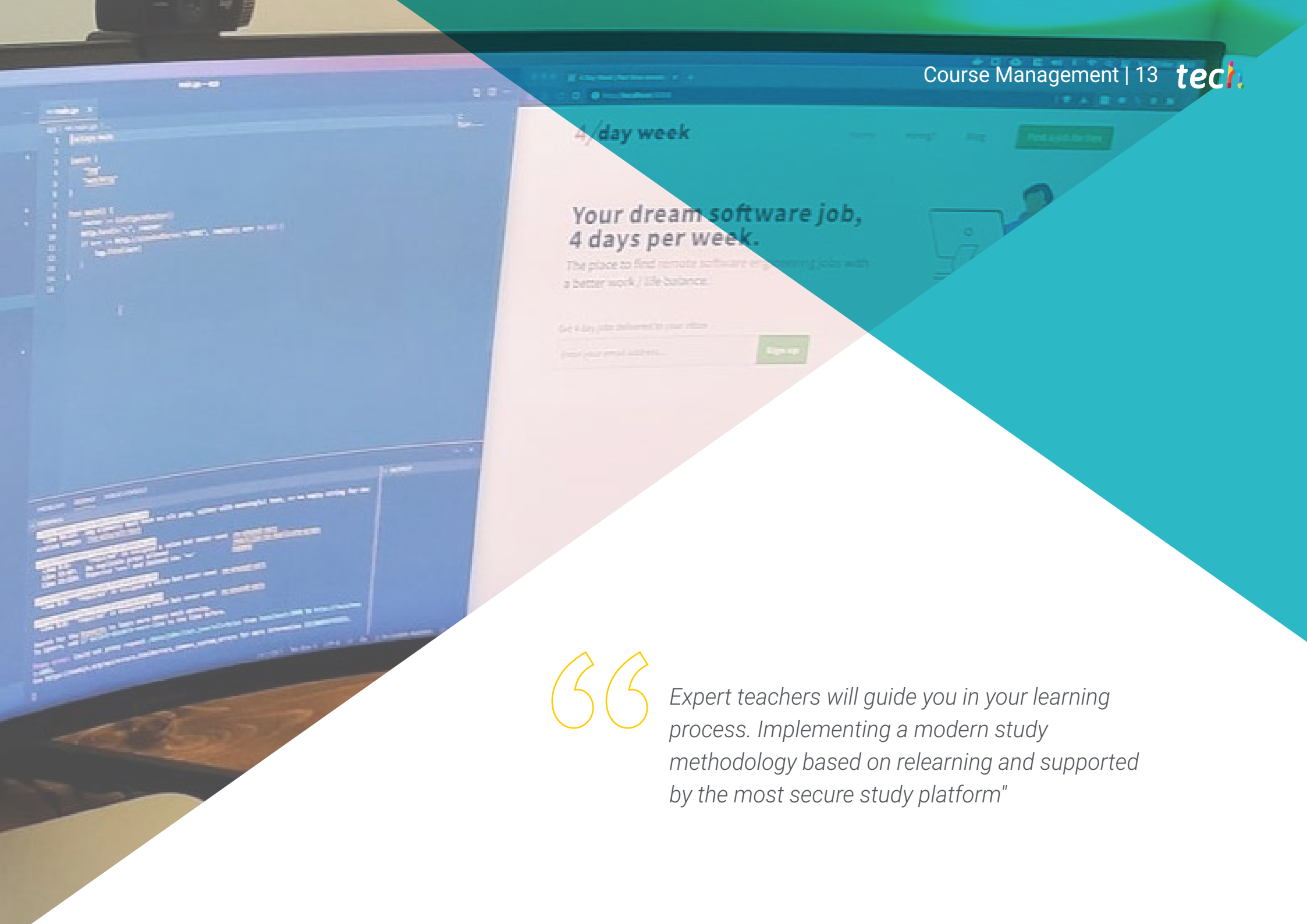
*You will develop the necessary skills to deal with any user interface"*

# 03

# Course Management

A team of professionals in the area of IT solutions and development of Full Stack Developer, Front-End programming and JavaScript frameworks will guide the student at all times, in this Postgraduate Diploma focused on all areas of application programming, to achieve the objectives remotely as it is a purely online program and following the Relearning methodology implemented by TECH. Supported by a safe and comfortable platform, with different interactive means of communication with students privately and in community.





“

*Expert teachers will guide you in your learning process. Implementing a modern study methodology based on relearning and supported by the most secure study platform"*



## Management



### D. Olalla Bonal, Martín

- ◆ Senior Blockchain Practice Manager at EY
- ◆ Blockchain Client Technical Specialist for IBM
- ◆ Director of Architecture for Blocknitive
- ◆ Non-Relational Distributed Databases Team Coordinator for wedoIT (IBM Subsidiary)
- ◆ Infrastructure Architect at Bankia
- ◆ Head of Layout Department at T-Systems
- ◆ Department Coordinator for Bing Data Spain S.L

## 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 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 in Mexico, Colombia and Spain for Key Business One
- ◆ Degree in Industrial Engineering from Yacambú University
- ◆ Expert in Blockchain and Decentralized Applications from the University of Alcalá de Henares



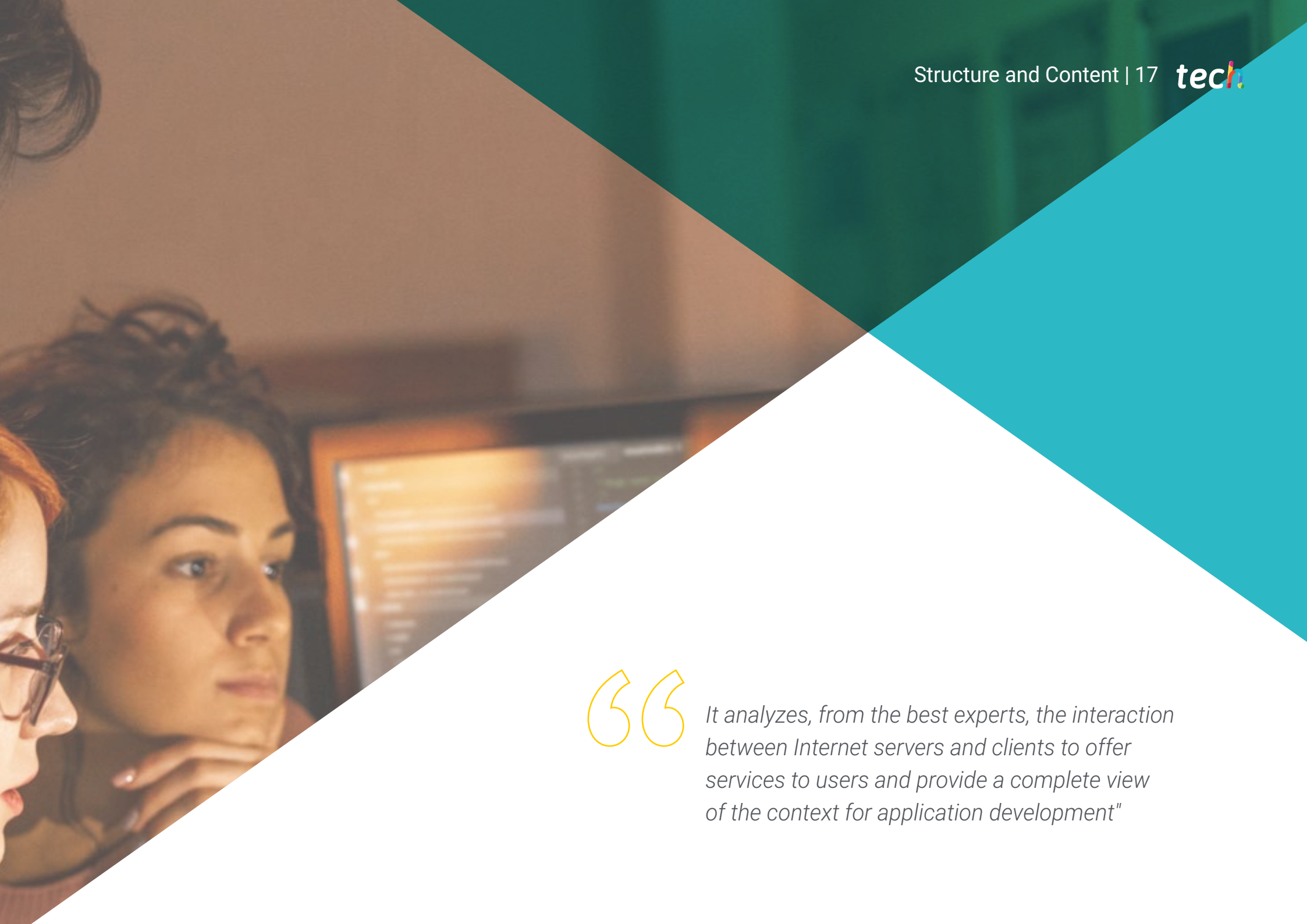
# 04

## Structure and Content

The contents of this Postgraduate Diploma have been selected by a team of expert teachers in Front-End Full-Stack Developer Programming, dividing them into 3 study modules. They allow you to go topic by topic exploring the depths and most important elements within the programming process: logical structures, design principles and analysis of algorithms. In addition to studying the key tools to develop software: Git, GitHub and command terminal. Deploying for this, different formats of both practical and theoretical content, through TECH's modern virtual campus.







“

*It analyzes, from the best experts, the interaction between Internet servers and clients to offer services to users and provide a complete view of the context for application development”*

## Module 1. Full Stack Developer

- 1.1. Full Stack Developer I. Programming and Languages
  - 1.1.1. Programming
  - 1.1.2. Programming Roles
  - 1.1.3. Languages and Framework
  - 1.1.4. Algorithm
  - 1.1.5. Characteristics of an Algorithm
- 1.2. Full Stack Developer 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

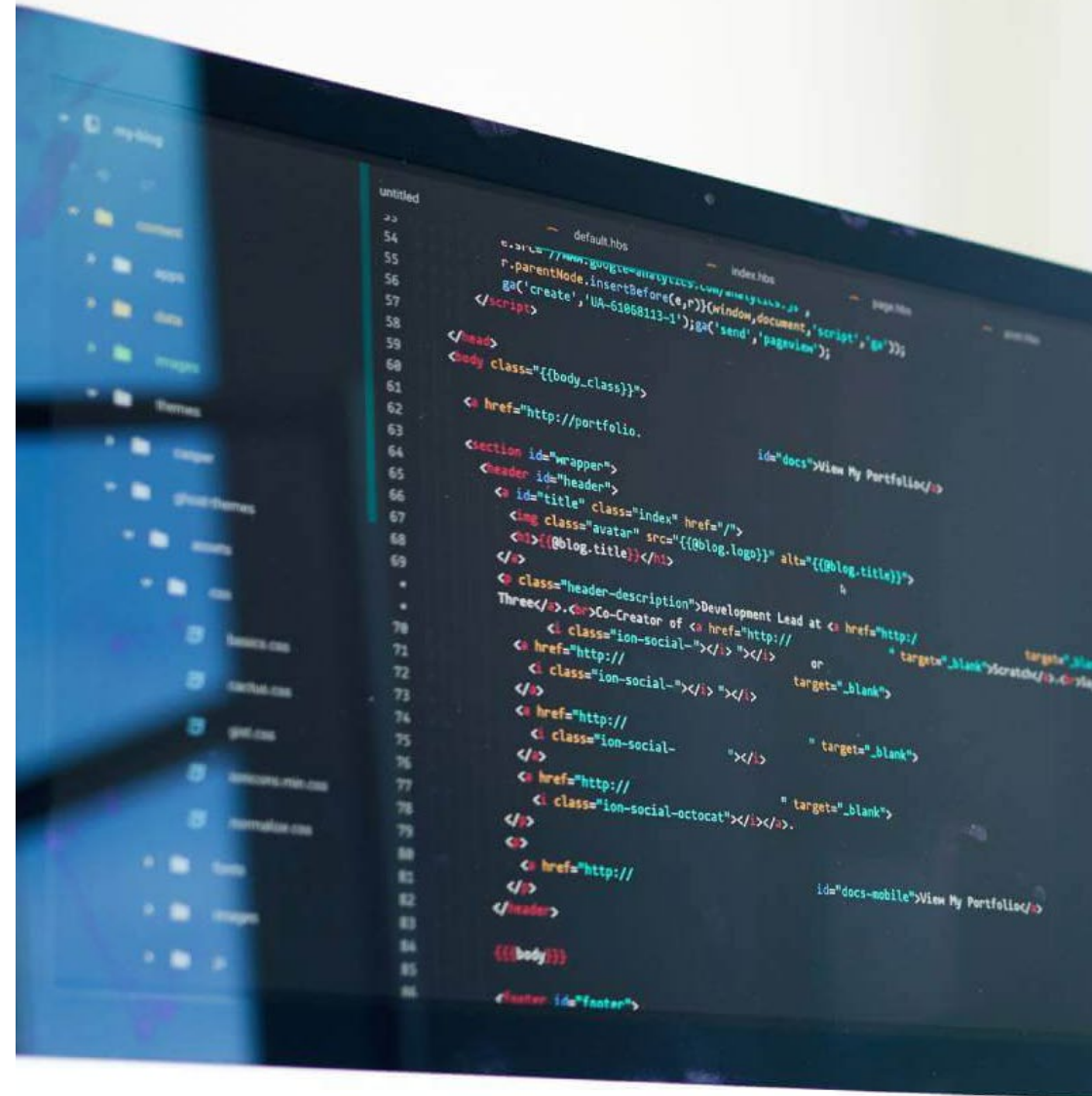


## Module 2. Front-End Programming

- 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 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



# 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.

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*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”*



*You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.*



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

### A learning method that is different and innovative

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

“*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.



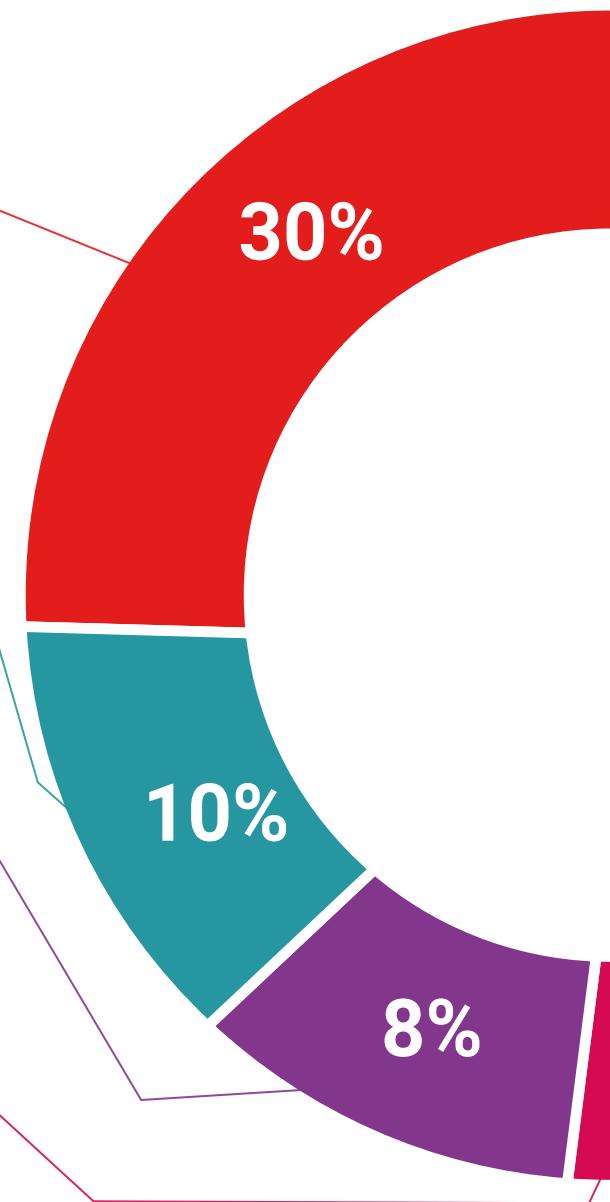
### Practising Skills and Abilities

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.

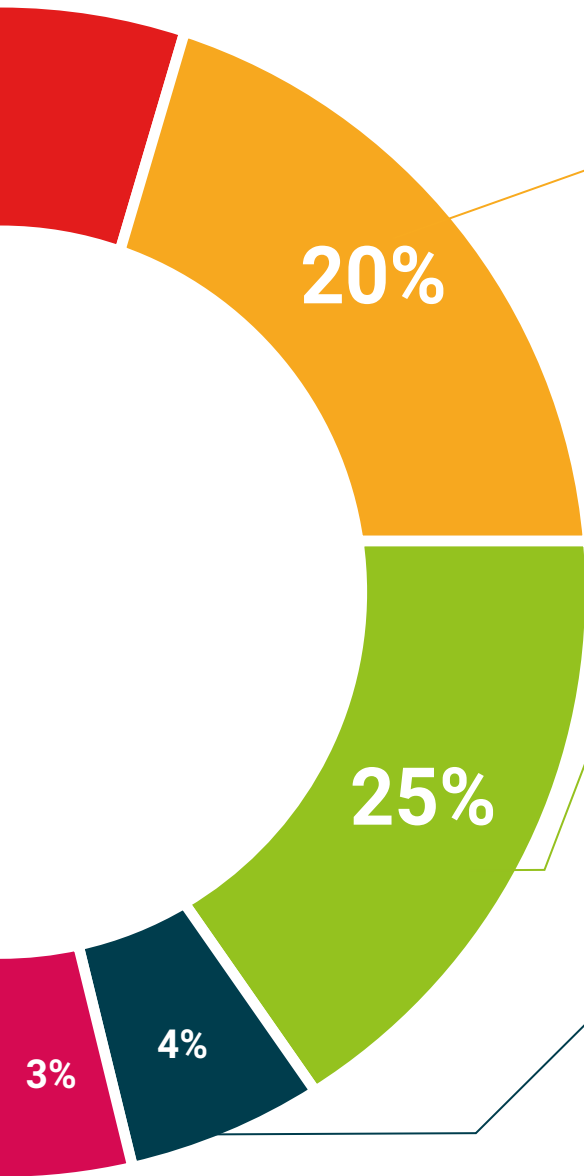


### Additional Reading

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



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

This **Postgraduate Diploma in Front-End Programming** 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 certificate 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 Front-End Programming**

Official N° of hours: **450 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate 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  
development language  
virtual classroom



## Postgraduate Diploma Front-End Programming

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

# Postgraduate Diploma Front-End Programming

