

Postgraduate Diploma Back-End Development from Scratch



Postgraduate Diploma Back-End Development from Scratch

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-back-end-development-scratch

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01

Introduction to the Program

Back-end development is a fundamental component in the creation of web and mobile applications, as it is responsible for managing and processing the information that allows interaction between the user and the system. According to the report by the International Data Corporation (IDC), it is estimated that the number of web-based applications will increase by 20% annually, which amplifies the need for personnel trained in the design and maintenance of efficient and secure back-end systems. To respond to this need, TECH has developed this Postgraduate Diploma that will provide a comprehensive view of the fundamental concepts and tools that professionals starting out in this field should master. All this, through a 100% online and innovative methodology.



“

Transform your digital future from scratch! With this online program you will learn how to create robust and scalable applications. Get your career off the ground today and take the first step into the world of back-end development"

Back-end development is fundamental for the creation of web and mobile applications, as it guarantees the efficient functioning of the systems by managing the database, the server logic and the interaction with the client. As companies increase their digital presence, the need for experts in the area continues to grow, making education in this field essential. Therefore, creating scalable and secure infrastructures is the basis of any successful digital development.

Given this premise, TECH's Back-End Development from Scratch program is presented as the ideal option to respond to the demands of the industry. The program has a comprehensive and multidisciplinary approach that will provide a unique educational experience covering everything from the fundamentals to the most advanced aspects of this field. In this way, specialists will delve into programming languages such as: Java, Python and Node.js, as well as databases, APIs and server management. In addition, they will address computer security and how to integrate Back-end solutions with cutting-edge technologies (the cloud and microservices), which will prepare them for the current and future challenges of the sector.

With this exhaustive preparation, graduates will be qualified to take up key positions in technology companies as back-end developers, systems architects or database engineers. In addition, they will have the ability to design robust and scalable infrastructures, which will open the doors to job opportunities in sectors such as fintech, Artificial Intelligence and cybersecurity, with high demand and remuneration.

At the same time, the qualification will be offered 100% online, allowing students to access the content at any time and from anywhere. Thanks to the Relearning methodology implemented, the program will be based on the repetition and consolidation of key concepts, which facilitates understanding and practical application. In this way, each student will be able to learn at their own pace, without compromising other responsibilities.

This **Postgraduate Diploma in Back-End Development from Scratch** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- ♦ The development of case studies presented by experts in programming
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Special emphasis on innovative methodologies in Back-End Development from Scratch
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Are you passionate about technology?
This Postgraduate Diploma will provide
you with the necessary tools to master
Back End from scratch. Enroll and make
the most of the online methodology
and the Relearning approach!"*

“

This qualification will prepare you to be an expert in the creation of Back-end applications. With a 100% online methodology and the support of expert professors, you will immerse yourself in related technologies”

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

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive learning experience designed to prepare for real-life situations.

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

Take the leap into the world of Back-end development! In this program you will master the basic concepts and the most advanced technologies, with an up-to-date syllabus and a practical approach.

Do you want to build powerful systems from scratch? Through the online and flexible methodology, you will achieve your objectives and learn how to create scalable and secure infrastructures.



02

Why Study at TECH?

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



“

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

The world's best online university, according to FORBES

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

The best top international faculty

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

The world's largest online university

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



The most complete syllabuses on the university scene

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

A unique learning method

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

The official online university of the NBA

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

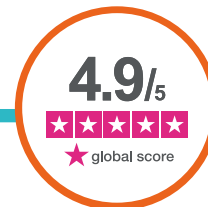
Leaders in employability

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



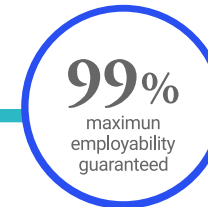
Google Premier Partner

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



The top-rated university by its students

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



03 Syllabus

Throughout this program, professionals will have access to a comprehensive syllabus that will enable them to create robust infrastructures, manage complex databases and ensure high-performance applications, preparing them for today's technological challenges. Through comprehensive modules, they will tackle the main programming languages such as Java, Node.js and Python, as well as delving into essential aspects of Back-End Development such as the creation of APIs, server management and the use of databases. They will also master computer security in order to build scalable and secure applications in real production environments.



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Key concepts are reinforced on an ongoing basis, ensuring that you achieve a deep and lasting understanding. In this way, the program will be adapted to your needs and schedule without compromising your performance"

Module 1. Back-End Development I: Python from Scratch

- 1.1. Python from Scratch. Installation
 - 1.1.1. Python Language. Features
 - 1.1.2. Installing Python on Windows, macOS and Linux
 - 1.1.3. Setting up the Development Environment: IDEs and Code Editors
 - 1.1.4. First Program in Python: "Hello World"
- 1.2. Syntax and Variables in Python
 - 1.2.1. Structure of Python Code: Indentation
 - 1.2.2. Comments in Python
 - 1.2.3. Variables and Data Types in Python
 - 1.2.4. Arithmetic and Logical Operations in Python
- 1.3. Flow Control: Conditionals
 - 1.3.1. Control Structures
 - 1.3.2. Conditional Statements: if, elif, else
 - 1.3.3. Ternary Conditional Operator
- 1.4. Loops in Python
 - 1.4.1. Use of Loops in Programming
 - 1.4.2. "for" and "while" Loops
 - 1.4.3. Flow Control in Loops: Break and Continue
 - 1.4.4. Nested Loops
- 1.5. Functions in Python
 - 1.5.1. Functions in Python. Uses
 - 1.5.2. Parameters and Arguments of Functions
 - 1.5.3. Return Values
 - 1.5.4. Predefined Functions vs. User-Created Functions
- 1.6. Lists and Tuples in Python
 - 1.6.1. Creation and Use of List in Python
 - 1.6.2. Common Operations with Lists: Add, Remove, Modify
 - 1.6.3. Tuples: Differences with Lists
 - 1.6.4. Creating and Using Lists in Python





- 1.7. Dictionaries and Sets in Python
 - 1.7.1. Dictionaries: Key-Value
 - 1.7.2. Methods for Manipulating Dictionaries
 - 1.7.3. Sets: Use
 - 1.7.4. Comparison of Dictionaries and Sets
- 1.8. File Handling in Python from Scratch
 - 1.8.1. Opening and Closing Files
 - 1.8.2. Opening Modes: Reading, Writing and Appending
 - 1.8.3. Reading and Writing Text Files
- 1.9. Handling Errors and Exceptions
 - 1.9.1. Types of Exceptions
 - 1.9.2. Using Try, Except to Handle Errors
 - 1.9.3. Creating Custom Exceptions
- 1.10. Best Practices and Debugging in Python
 - 1.10.1. Debugging: Purpose
 - 1.10.2. Debugging Techniques: Use of Print and Breakpoints
 - 1.10.3. Best Practices in Code Writing

Module 2. Back-End Development II - Algorithms and Data Structures with Python from Scratch

- 2.1. Search Algorithms in Data Structures
 - 2.1.1. Purpose of Search Algorithms in Data Structures
 - 2.1.2. Linear Search: Implementation and Use Cases
 - 2.1.3. Binary Search: Examples
 - 2.1.4. Efficiency Comparison: Linear vs Binary Search
- 2.2. Sorting Algorithms in Data Structures (I). Basic Sorting Techniques Bubble Sort and Insertion Sort
 - 2.2.1. Bubble Sort: Implementation and Analysis
 - 2.2.2. Insertion Sort: Implementation and Use Cases
 - 2.2.3. Comparison between Bubble Sort and Insertion Sort

- 2.3. Sorting Algorithms in Data Structures (II). Advanced Sorting Techniques: Selection Sort, Merge Sort and Quick Sort
 - 2.3.1. Selection Sort: Implementation and Analysis
 - 2.3.2. Merge Sort: Implementation
 - 2.3.3. Quick Sort: Implementation
 - 2.3.4. Comparison of Efficiency between Sorting Algorithms
- 2.4. Recursive Algorithms for Searching in Data Structures
 - 2.4.1. Recursion: Use
 - 2.4.2. Direct and Indirect Recursion
 - 2.4.3. Recursive Algorithms: Factorial and Fibonacci. Examples
- 2.5. Complexity of Search Algorithms in Data Structures
 - 2.5.1. Algorithmic Complexity: Efficiency Measurement
 - 2.5.2. Big-O Notation
 - 2.5.3. Complexity Analysis in Search and Sorting Algorithms
- 2.6. Advanced Data Structures
 - 2.6.1. Trees: Terminology
 - 2.6.2. Binary Trees: Operations
 - 2.6.3. Binary Search Trees (BST): Search, Insertion and Deletion
- 2.7. Graph Algorithms
 - 2.7.1. Graphs: Representation
 - 2.7.2. Graph Algorithms: DFS and BFS
 - 2.7.3. Comparison between DFS and BFS
- 2.8. Dynamic Programming
 - 2.8.1. Dynamic Programming: Application
 - 2.8.2. Differences between Dynamic Programming and Recursion
 - 2.8.3. Optimization through Dynamic Programming
- 2.9. Data Search Algorithm Optimization Techniques
 - 2.9.1. Data Search Algorithm Optimization Importance
 - 2.9.2. Optimization Techniques: Memoization
 - 2.9.3. Divide and Conquer Divide and Conquer
- 2.10. Other Algorithms in Python
 - 2.10.1. Permutation and Combination Algorithms
 - 2.10.2. Basic Hashing Algorithms
 - 2.10.3. Counting and Subsets Generation Algorithms

Module 3. Object-Oriented Programming and Design Patterns from Scratch

- 3.1. Object-Oriented Programming (OOP) from Scratch
 - 3.1.1. Object Oriented Programming
 - 3.1.2. Differences between OOP and Structured Programming
 - 3.1.3. OOP Elements: Classes, Objects, Methods and Attributes
- 3.2. Classes and Objects in Python
 - 3.2.1. Creation of Classes and Objects in Python
 - 3.2.2. Instance and Class Attributes
 - 3.2.3. Special Methods (init, str, repr, etc.)
 - 3.2.4. Static and Class Methods: Uses
- 3.3. Encapsulation and Abstraction in Classes
 - 3.3.1. Encapsulation: Uses
 - 3.3.2. Access Modifiers in Python
 - 3.3.2.1. Public, Protected and Private
 - 3.3.3. Abstraction: Hiding Details and Improving Simplicity
 - 3.3.4. Use of Properties (@property) for Access Control
- 3.4. Inheritance in Python. Usefulness in OOP
 - 3.4.1. Inheritance: Usefulness in OOP
 - 3.4.2. Creating Derived Classes and Multiple Inheritance in Python
 - 3.4.3. Inherited Methods and Attributes and Overloading in Inheritance
 - 3.4.4. Class Hierarchies and Base Class Management
- 3.5. Polymorphism and Overloading in Python
 - 3.5.1. Polymorphism: Duck Typing
 - 3.5.2. Polymorphism with Classes and Methods in Python
 - 3.5.3. Overloading and Overwriting Methods in Python
 - 3.5.4. Polymorphism in Software Design. Applications and Advantages
- 3.6. Class Relations and Complex Structure Design
 - 3.6.1. Types of Relations: Association, Aggregation and Composition
 - 3.6.2. Differences between Aggregation and Composition: Examples
 - 3.6.3. Design of Complex Structures Using Class Relations

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- 3.7. Design Patterns and SOLID Principles
 - 3.7.1. Relevance of Design Patterns
 - 3.7.2. Application of Design Patterns in OOP Projects. Advantages
 - 3.7.3. Classification of Design Patterns
 - 3.7.4. SOLID Principles and their Importance in Object-Oriented Design
 - 3.8. Creative Design Patterns
 - 3.8.1. Purpose of the Creational Design Patterns
 - 3.8.2. Singleton Pattern
 - 3.8.3. Factory and Factory Method Pattern
 - 3.8.4. Builder Pattern
 - 3.9. Structural Design Patterns
 - 3.9.1. Purpose of the Structural Design Patterns
 - 3.9.2. Adapter Pattern
 - 3.9.3. Decorator Pattern
 - 3.9.4. Facade Pattern
 - 3.10. Behavioral Design Patterns
 - 3.10.1. Behavioral Patterns. Applications
 - 3.10.2. Observer Pattern
 - 3.10.3. Strategy Pattern

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By gaining skills in this field, you will have access to a wide variety of professional opportunities in the technology sector, where the demand for Back-end development experts continues to grow”

04

Teaching Objectives

The main goal of this program is to provide a deep understanding of the fundamental technologies and concepts necessary for the development of robust and scalable applications. Throughout the program, professionals will master the most relevant programming languages for developing efficient and secure servers, APIs, and databases. In turn, the comprehensive approach will ensure that they not only acquire technical knowledge, but also practical skills to face the challenges of Back-end development in real-world scenarios. Finally, they will handle relational and non-relational databases to design data structures that optimize application performance.



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Only this Postgraduate Diploma will provide you with a global vision of the entire Back-end Development life cycle, from project conception to implementation and maintenance”

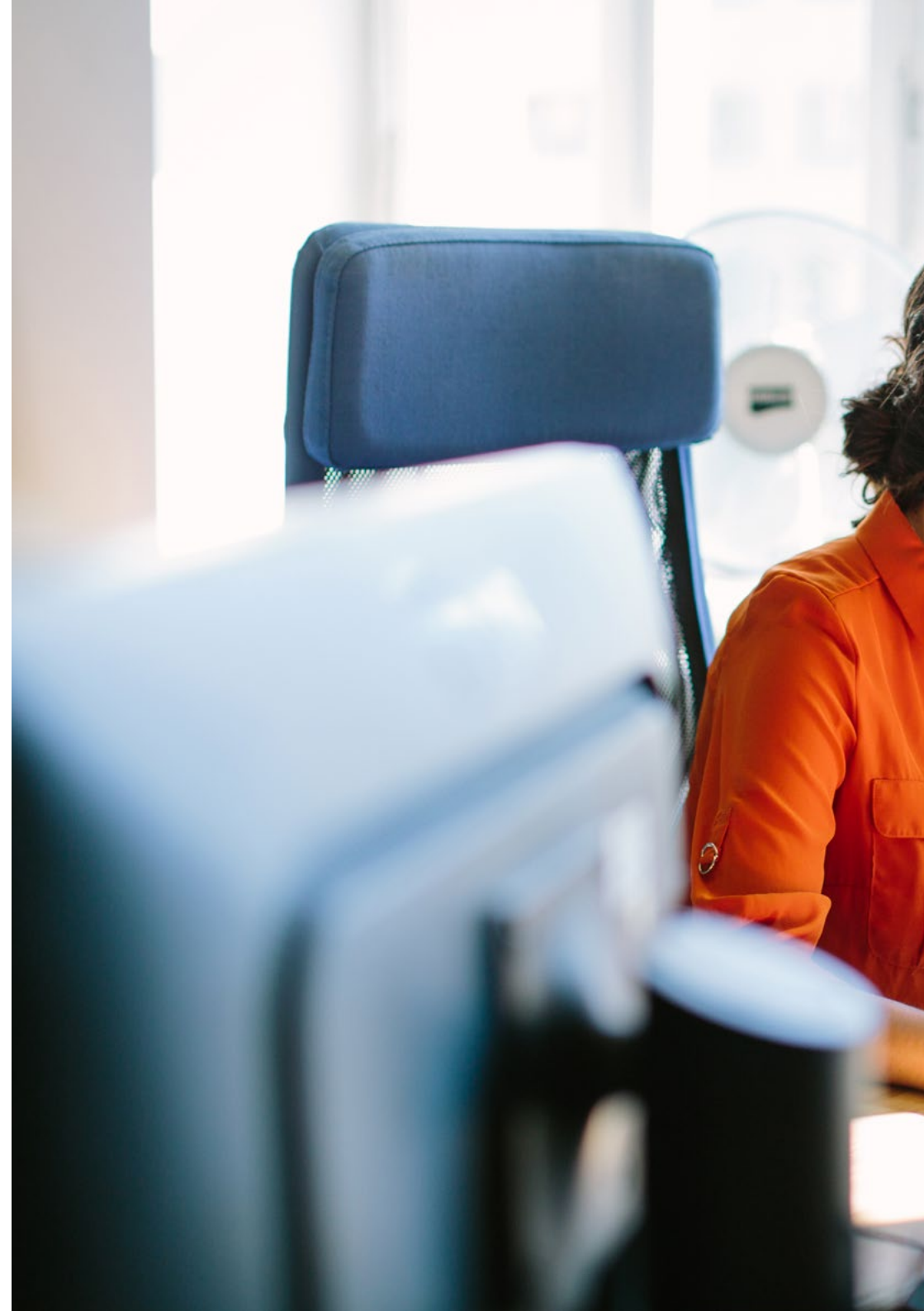


General Objectives

- ♦ Design efficient and secure database structures
- ♦ Implement back-end applications using modern programming languages
- ♦ Optimize the performance of servers and web applications
- ♦ Configure suitable development environments for back-end projects
- ♦ Integrate APIs and external services into back-end applications
- ♦ Apply security principles in system development
- ♦ Automate processes by creating back-end scripts
- ♦ Manage data flows between servers and clients
- ♦ Develop scalable solutions for technology projects
- ♦ Solve complex problems related to back-end logic



You will access the content 100% online, study at your own pace and master key technologies such as Java, Node.js and databases. What are you waiting for to enroll at the world's largest online university according to Forbes?"





Specific Objectives

Module 1. Back-End Development I: Python from Scratch

- ♦ Master the characteristics of Python
- ♦ Understand the structure and basic syntax of Python
- ♦ Develop skills in flow control using conditionals
- ♦ Apply loops to create repetition cycles in Python

Module 2. Back-End Development II - Algorithms and Data Structures with Python from Scratch

- ♦ Implement and compare types of search algorithms in data structures
- ♦ Analyze sorting algorithms such as bubble, insertion, selection, merge sort and quick sort
- ♦ Develop the concept of recursion and its application in problem solving
- ♦ Examine algorithmic complexity and efficiency measurement using Big O notation

Module 3. Object-Oriented Programming and Design Patterns from Scratch

- ♦ Define the key concepts of Object-Oriented Programming such as classes, objects, attributes, methods, encapsulation, abstraction, inheritance and polymorphism
- ♦ Understand the use of encapsulation and abstraction in classes using the Python programming language
- ♦ Examine the concept of polymorphism and overloading within the Python language, understanding its applications and advantages
- ♦ Determine the types of relationships between classes such as association, aggregation and composition

05

Career Opportunities

This qualification will open up a range of professional opportunities in one of the most in-demand and dynamic sectors of the digital world. Graduates will have access to a wide range of job positions, from back-end developers to systems architects, as well as data engineers and IT security specialists. In addition, they will be able to work in various technological areas such as software development, Artificial Intelligence, cybersecurity and cloud infrastructure management.





“

TECH will give you the opportunity to boost your career and prepare you to face the challenges of the technology sector. You will have a completely up-to-date syllabus and an elite teaching team"

Graduate Profile

Graduates will be highly competent professionals, capable of adapting to the constant changes in the technology sector. In this sense, they will become experts capable of developing robust, scalable and secure Back-end solutions, successfully facing the challenges posed by today's digital environment. In addition, their in-depth knowledge of programming languages, databases and server architectures will enable them to work efficiently in various areas of software development and technology infrastructure management.

Thanks to your practical and up-to-date training, you will be in an excellent position to become a leader in the development of cutting-edge digital solutions.

- ♦ **Resolution of Complex Problems:** Identify and solve technical problems efficiently, addressing challenges related to back-end systems development, database integration and process optimization
- ♦ **Teamwork:** Collaborate effectively in multidisciplinary teams to integrate knowledge in Back-end development with other technological areas, contributing to the success of joint projects
- ♦ **Effective Communication:** Convey information clearly and precisely, both written and verbal, to explain technical problems and solutions in an accessible way
- ♦ **Time and Project Management:** Organize and manage projects efficiently, prioritizing tasks, meeting deadlines and ensuring quality in the development of technological solutions





After completing the program, you will be able to use your knowledge and skills in the following positions:

- 1. Back-End Developer:** Responsible for designing, implementing and maintaining the structures that enable applications to operate, managing databases and servers to guarantee the efficient functioning of the system.
- 2. Software Engineer:** Responsible for developing technological solutions through programming, optimizing software performance and ensuring that Back-end applications are scalable and secure.
- 3. Software Architect:** Manager of the design and technical structure of Back-end applications and systems, choosing the appropriate technologies and platforms to guarantee the scalability and sustainability of the project.
- 4. Database Administrator:** Developer of the databases used in Back-end systems, ensuring the integrity, availability and performance of the information.
- 5. DevOps Engineer:** Responsible for integrating development operations with production operations, implementing automation and quality control in the software life cycle.
- 6. Full Stack Developer:** Responsible for developing the parts that manage the logic, the server and the databases.
- 7. Back-End Technology Consultant:** Advises companies on the best technologies and practices for developing efficient and scalable back-end solutions, adapted to the needs of the business.
- 8. API Developer:** Responsible for creating and managing application programming interfaces (APIs) that allow different systems and services to interact smoothly and securely.

06

Study Methodology

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

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



“

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

The student: the priority of all TECH programs

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

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

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

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



The most comprehensive study plans at the international level

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

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

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

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

Case Studies and Case Method

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

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

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



Relearning Methodology

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

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

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

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



A 100% online Virtual Campus with the best teaching resources

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

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

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

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



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

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

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

The university methodology top-rated by its students

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

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

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

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



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



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

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



Practicing Skills and Abilities

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



Interactive Summaries

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

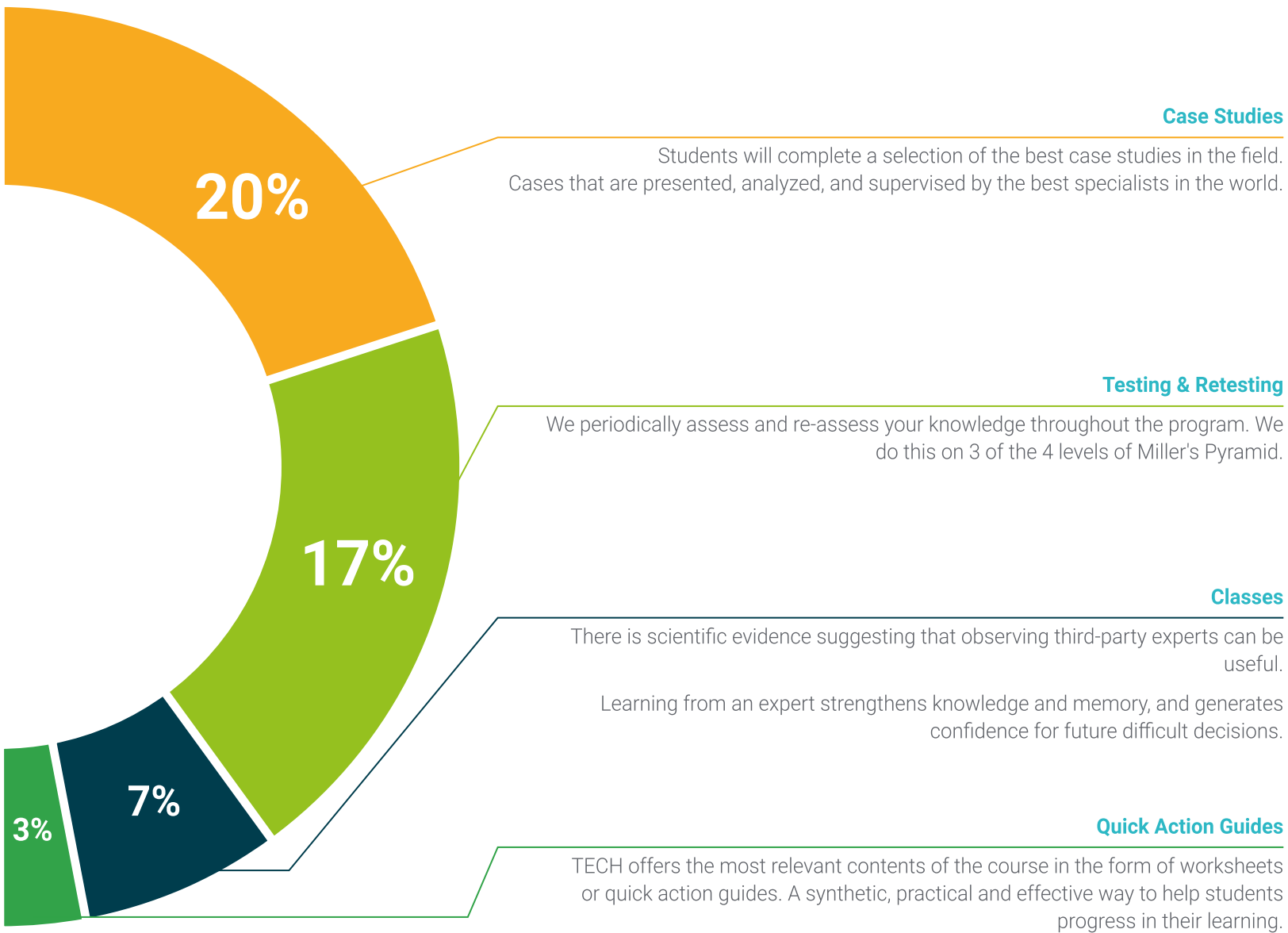
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

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



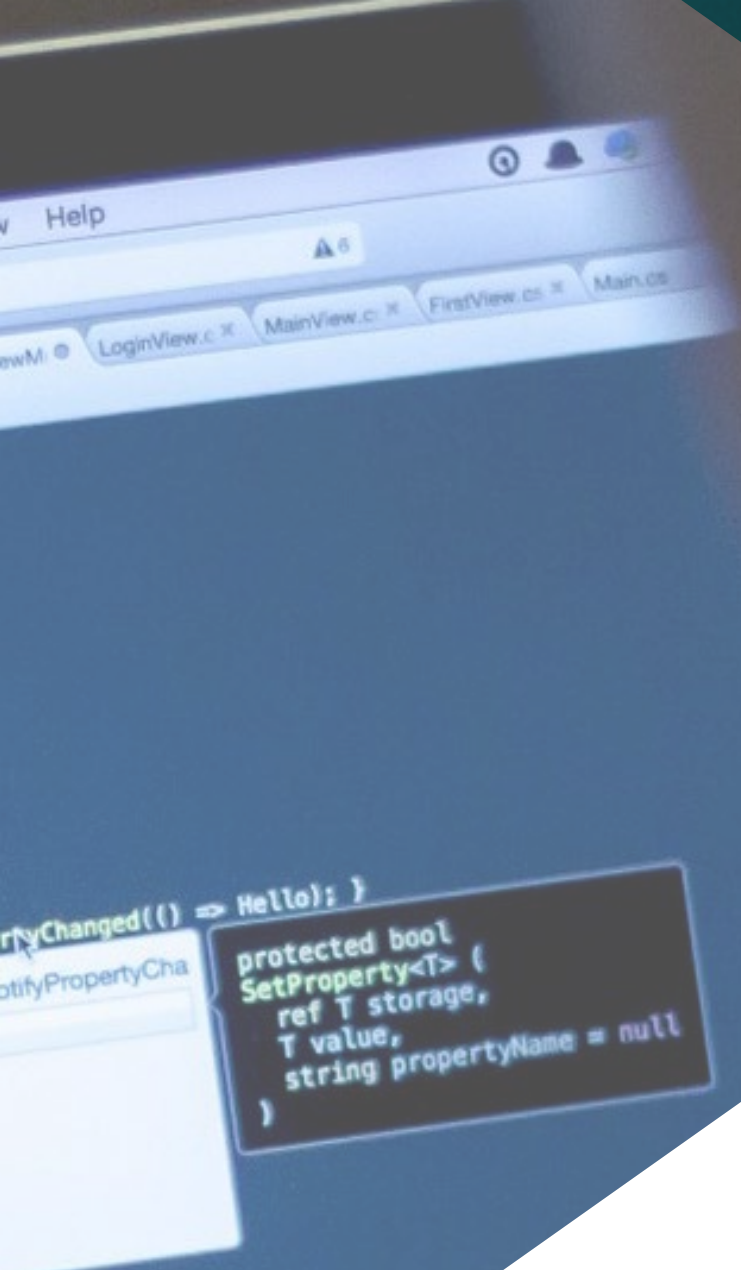


07

Teaching Staff

The teaching staff is made up of a highly qualified team with vast experience in the field of Back-end systems programming and development. Each teacher has been carefully selected not only for their high level of academic preparation, but also for their practical experience in the technology sector, which allows them to offer an up-to-date and direct perspective on the needs of the market. In this sense, these mentors combine their theoretical knowledge with practical skills, offering students a comprehensive view of the main languages and related technologies.





“

Not only will you master the key technologies for software and database development, but you will also boost the growth of your professional career. Take your future to the next level!”

Management



Dr. Lucas Cuesta, Juan Manuel

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



Mr. Márquez Ruiz de Lacanal, Juan Antonio

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



Professors

Mr. Pi Morell, Oriol

- ♦ Functional Analyst at Fihoca
- ♦ Hosting and Mail Product Owner CDMON
- ♦ Functional Analyst and Software Engineer at Atmira and CapGemini
- ♦ Teacher at ORACLE Forms CapGemini and Atmira
- ♦ Professional Master's Degree in Technical Engineering in Computer Management from the Autonomous University of Barcelona.
- ♦ Master's Degree in Artificial Intelligence from the Catholic University of Avila
- ♦ Professional's Degree in Business Administration and Management by IMF Smart Education
- ♦ Master's Degree in Information of Systems Management by IMF Smart Education
- ♦ Postgraduate Degree in Design in Patterns from the Open University of Catalonia

Mr. Grillo Hernández, José Enrique

- ♦ Senior Mobile Applications Developer at Globant
- ♦ Android Developer at Plexus Tech
- ♦ Senior Android Developer at RoadStr
- ♦ Senior Mobile Developer at Avantgarde IT-Information Technology Services
- ♦ Project Leader at Smartdess
- ♦ Developer at Educatablet
- ♦ Technology Analyst at Corporate Mobile Solutions
- ♦ Master's Degree in System Engineering from the Simón Bolívar University

08 Certificate

This Postgraduate Diploma in Back-End Development from Scratch guarantees, in addition to the most rigorous and up-to-date program, access to an Postgraduate Diploma issued by TECH Global University.



“

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

This private qualification will allow you to obtain a diploma for the **Postgraduate Diploma in Back-End Development from Scratch** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Back-End Development from Scratch**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**





Postgraduate Diploma Back-End Development from Scratch

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma Back-End Development from Scratch