Postgraduate Diploma
DevOps and Software Quality

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Postgraduate Diploma
DevOps and Software Quality

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

Website: **www.techtitute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-devops-software-quality**

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Introduction

The constant digital transformation demands continuous software updates to optimize the user experience. But within this pressure, the demand for innovation jeopardizes the quality factor, which is essential to deliver optimal and sustainable projects, without adverse consequences on their usability. In this program, students will learn all about the implementation of DevOps as a key to obtain speed, quality and reliability in software development processes. 100% online education, achievable in a maximum of 6 months and based on the most innovative methodology.

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With this program, you will master all the advanced practical solutions in software development"

Isolated teams, manual approaches and increasingly complex tools slow down innovation. Scaling DevOps practices is critical to accelerate the launch of high-quality digital services. The combination of approaches, practices and tools that help companies greatly accelerate the process of creating and implementing software could have a decisive impact on digital transformation.

That is why TECH has dedicated an entire program for specialization in DevOps and Software Quality, aimed at professionals seeking to optimize their results and achieve success in their processes. Developing a global and comprehensive view of the entire ecosystem, which allows us to identify the existing failure points during the development evaluation; as well as the importance of process automation to reduce human errors.

Therefore, graduates will be able to create and adapt the complete software delivery cycle according to specific needs, taking into account economic and security considerations. Developing the latest practices and tools in continuous integration and deployment, to selectively apply them in your future projects.

In the meantime, this program also contemplates the development of specialized knowledge on the design, elaboration and maintenance of a database in terms of standards and performance measures. To address data integrity protection and minimize data redundancy.

To make this possible, TECH Global University has gathered a group of experts in the area, who will transmit the most up-to-date knowledge and experience. Designed under the relearning methodology, which facilitates the memorization and learning of concepts in an agile and efficient way. Available for study from any device with an Internet connection. Obtaining the qualification in a maximum of 6 months.

This **Postgraduate Diploma in DevOps and Software Quality** contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by experts in software development
- 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

The Postgraduate Diploma analyzes the criteria underlying software quality. Broaden your expertise. Enroll now"

After this program, you will be able to implement DevOps correctly. Preparing for a successful software delivery cycle"

Develop the latest practices and tools in continuous integration and deployment. Apply them selectively in your future projects.

Become an expert in 6 months, 100% online and with the most efficient methodology.

The program's teaching staff includes professionals from the sector who contribute their work experience to this training 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 training programmed to train 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 student will be assisted by an innovative interactive video system created by renowned and experienced experts.
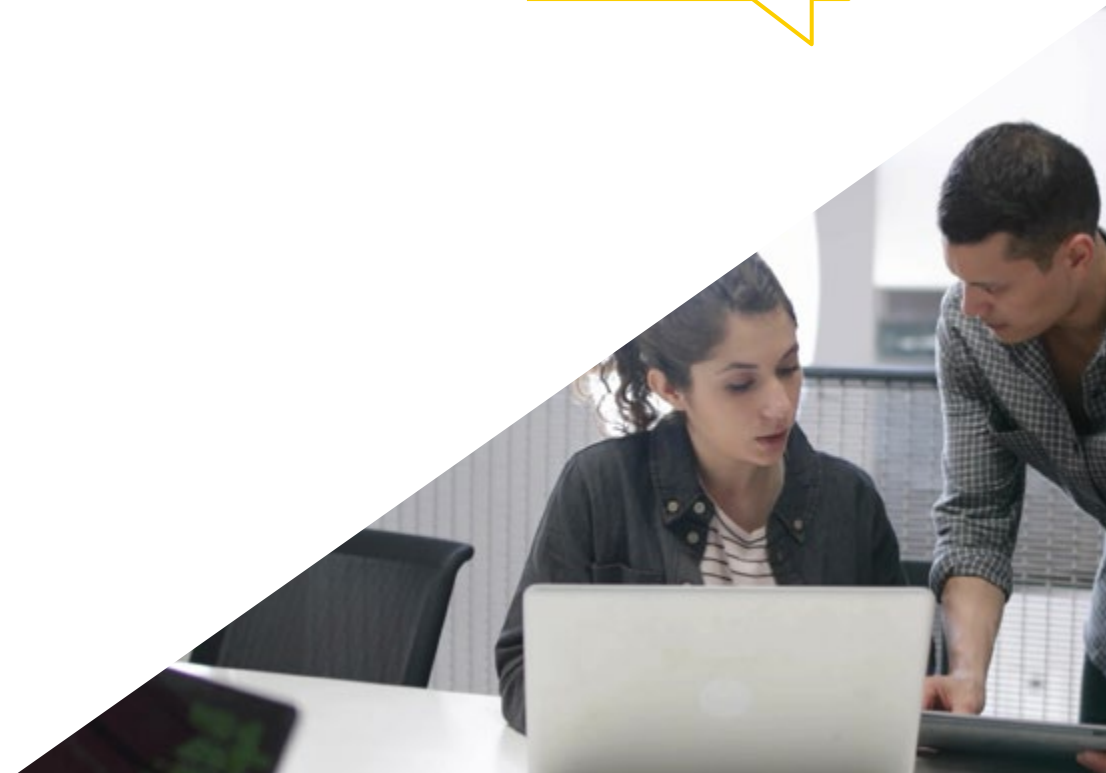
02
Objectives

The objective of this program is to provide the IT professional with the most up-to-date knowledge about the DevOps culture and its implementation in software development to obtain quality results. Delving into continuous integration processes and database design as part of advanced practical solutions in software development.

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*Boost your professional profile with this exclusive program from TECH Global University. Providing you with the most specialized knowledge in software development"*

General Objectives

- Develop the criteria, tasks and advanced methodologies to understand the relevance of quality-oriented work
- Develop the relevant regulatory aspects
- Reduce the technical debt of projects with a quality approach rather than an approach based on economics and short deadlines
- Implement DevOps and systems processes for Quality Assurance
- Develop Database Standardization
- Provide the student with specialized knowledge to be able to measure and quantify the quality of a software project

"A quality-focused IT professional is an asset on the rise. Enroll now on this Postgraduate Diploma and open yourself to new business opportunities"
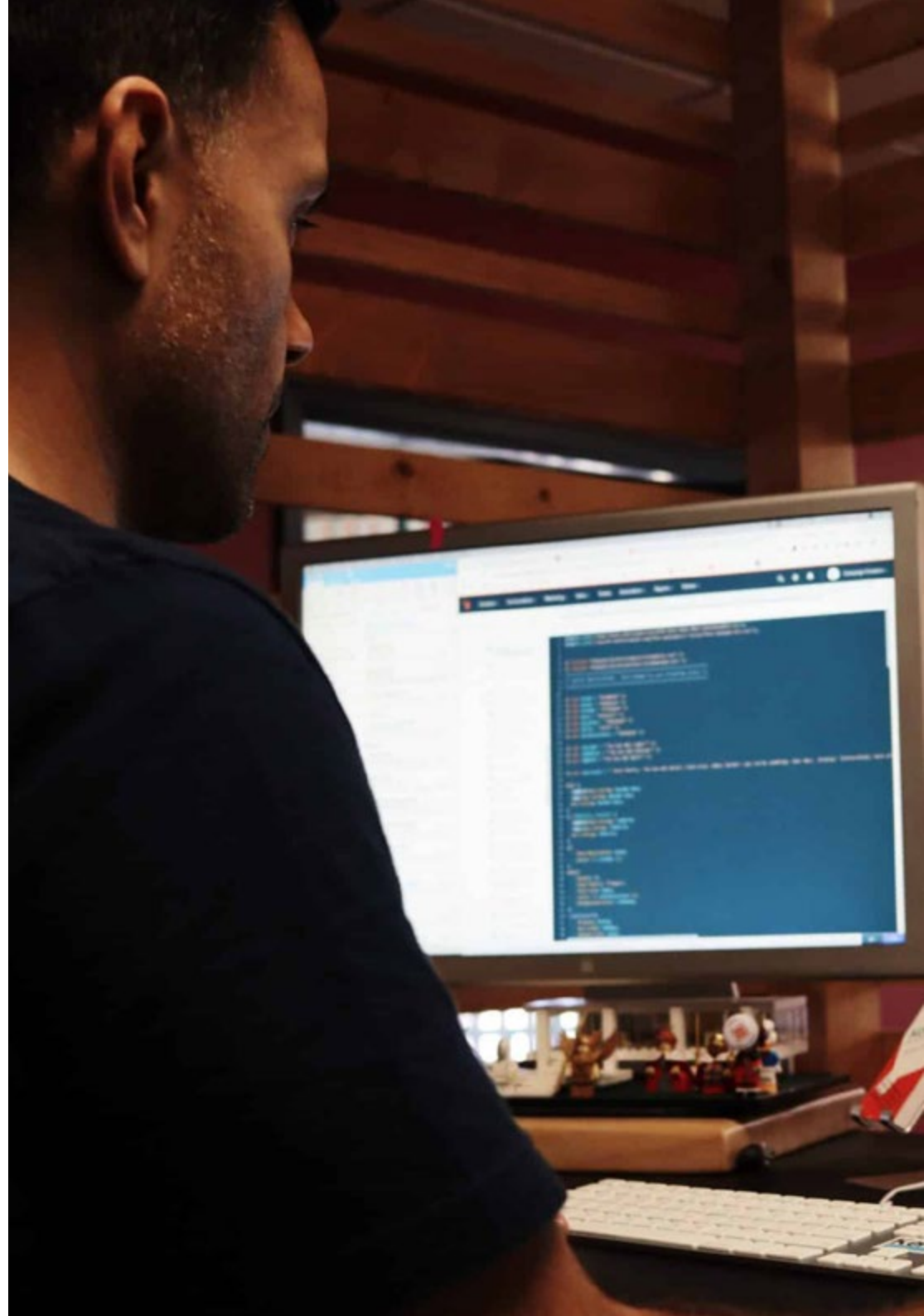
Specific Objectives

Module 1. DevOps and Continuous Integration. Advanced Practical Solutions in Software Development

- Identify the stages of the software development and delivery cycle adapted to particular cases
- Design a software delivery process using continuous integration
- Build and implement continuous integration and deployment based on your previous design
- Establish automatic quality checkpoints on each Software delivery
- Maintain an automatic and robust software delivery process
- Adapt future needs to the continuous integration and deployment process
- Analyze and anticipate security vulnerabilities during and after the software delivery process

Module 2. Database (DB) Design. Standardization and performance. Software Quality

- Assess the use of the Entity-Relationship Model for the preliminary design of a database
- Apply an entity, attribute, key, etc. for the best data integrity
- Assess the dependencies, forms and rules of database normalization
- Specialize in the operation of an OLAP data warehouse system, developing and using both fact and dimension tables
- Determine the key points for database performance
- Complete proposed real-world simulation cases as ongoing learning of database design, normalization, and performance
- Establish in the simulation cases, the options to resolve in the creation of the database from a constructive point of view

Module 3. Scalable Architecture Design Architecture in the Software Life Cycle

- Develop the concept of Software architecture and its characteristics
- Determine the different types of scalability in Software architecture
- Analyze the different levels that can occur in a web scalability
- Acquire specialized knowledge of the software life cycle concept, stages and models
- Determine the impact of an architecture on the Software life cycle, with its advantages, limitations and support tools
- Complete proposed real simulation cases, as a continuous learning of the architecture and life cycle of the Software
- Evaluate, in the simulation cases, to what extent it may be feasible or unnecessary to use the software

Course Management

A team of professionals in the field of IT solutions and software development and research integrates the teaching staff of this Postgraduate Diploma in DevOps and Software Quality. Which will guide the student at all times, so that they can achieve their professional training goals. Supported by a secure and comfortable digital platform, with different interactive means of communication with students privately and in community.

The faculty of this program is made up of experts in software development. What guarantees a quality learning process"

Management

Mr. Molina Molina, Jerónimo

- AI Engineer & Software Architect. NASSAT - Internet Satellite in Motion
- Senior Consultant at Hexa Ingenieros. Introducer of Artificial Intelligence (ML and CV)
- Expert in artificial intelligence based solutions in the fields of Computer Vision, ML/DL and NLP. Currently investigating application possibilities of Transformers and Reinforcement Learning in a personal research project
- University Expert in Business Creation and Development. Bancaixa – FUNDEUN Alicante
- Computer Engineer. University of Alicante
- Master in Artificial Intelligence. Catholic University of Avila
- Executive MBA. European Business Campus Forum

Professors

Mr. Tenrero Morán, Marcos

- DevOps Engineer – Allot Communications
- Application Lifecycle Management & DevOps– Meta4 Spain. Cegid
- QA Automation Engineer – Meta4 Spain. Cegid
- Graduated in Computer Engineering from Rey Juan Carlos University
- Development of professional applications for Android - Galileo University (Guatemala)
- Cloud Services Development (nodeJs, JavaScript, HTML5) - UPM
- Continuous Integration with Jenkins – Meta4. Cegid
- Web Development with Angular-CLI (4), Ionic and nodeJS. Meta4 - Rey Juan Carlos University

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Structure and Content

The contents of this Postgraduate Diploma in DevOps and Software Quality are distinguished by their deep and specific development. Based on current events and with practical cases of real problems that allow students to go from unit to unit understanding the process of implementation of advanced solutions in software development, within the framework of the application of DevOps practices and continuous integration. Taking into account in the same sense the standardization and performance of the databases. For this purpose, different content formats are deployed through TECH Global University's modern virtual campus.
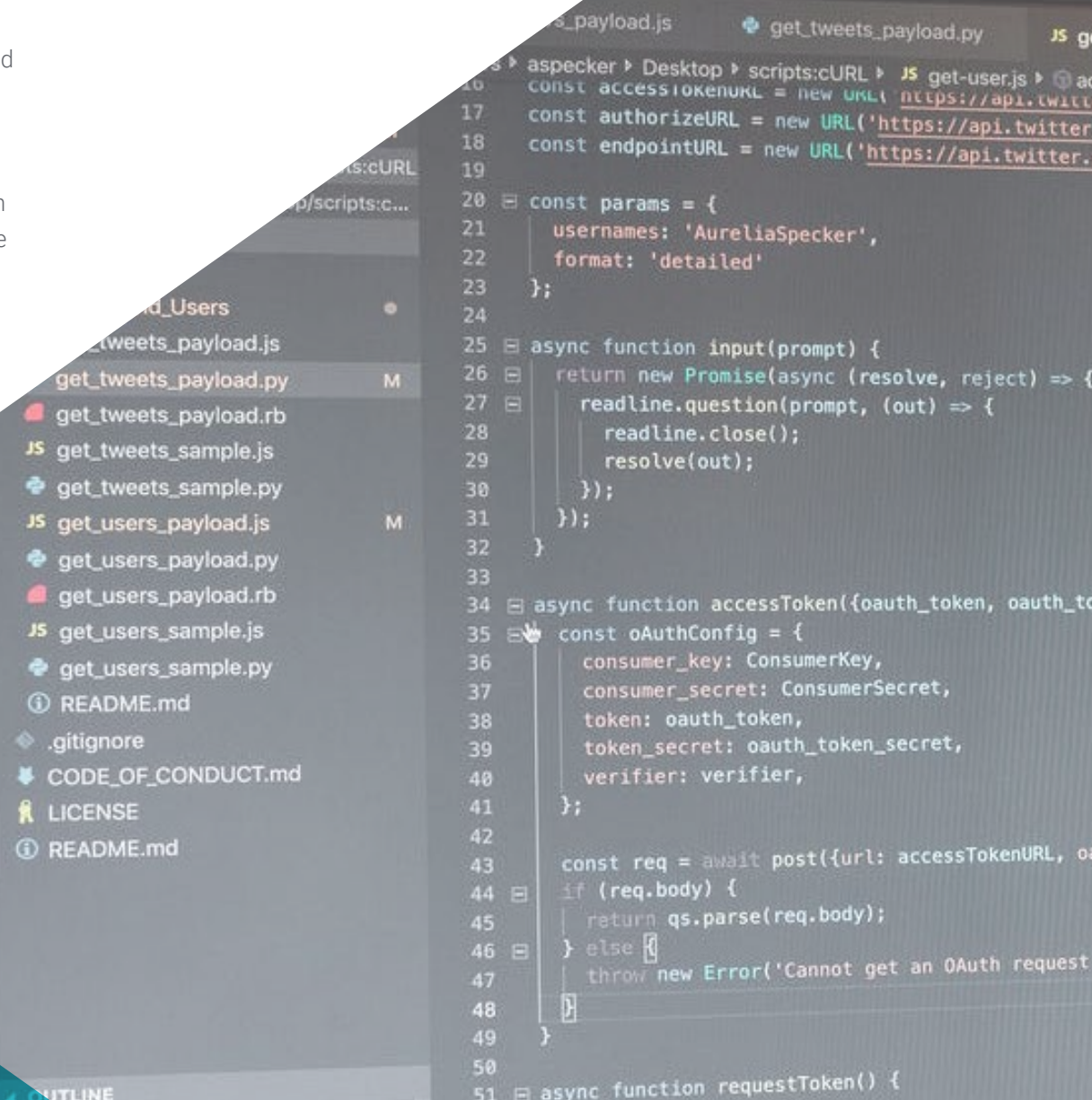
"
You will learn to develop software with an evolvable life cycle, adapted to real needs"

Module 1. DevOps. Software Quality Management

1.1. DevOps. Software Quality Management
    1.1.1. DevOps
    1.1.2. DevOps and Software Quality
    1.1.3. DevOps. Benefits of DevOps Culture
1.2. DevOps. Relation to Agile
    1.2.1. Accelerated Delivery
    1.2.2. Quality
    1.2.3. Cost Reduction
1.3. DevOps Implementation
    1.3.1. Problem identification
    1.3.2. Implementation in a Company
    1.3.3. Implementation Metrics
1.4. Software Delivery Cycle
    1.4.1. Design Methods
    1.4.2. Agreements
    1.4.3. Roadmap
1.5. Error-Free Code Development
    1.5.1. Maintainable Code
    1.5.2. Development Patterns
    1.5.3. Code Testing
    1.5.4. Software Development at Code Level Good Practices
1.6. Automation
    1.6.1. Automization Types of Tests
    1.6.2. Cost of Automation and Maintenance
    1.6.3. Automization Mitigating Errors
1.7. Deployment
    1.7.1. Target Assessment
    1.7.2. Design of an Automatic and Adapted Process
    1.7.3. Feedback and Responsiveness

1.8. Incident Management
    1.8.1. Incident Management
    1.8.2. Incident Analysis and Resolution
    1.8.3. How to Avoid Future Mistakes
1.9. Deployment Automation
    1.9.1. Preparing for Automated Deployments
    1.9.2. Assessment of the Health of the Automated Process
    1.9.3. Metrics and Rollback Capability
1.10. Good Practices. Evolution of DevOps
    1.10.1. Guide to Good DevOps Practices
    1.10.2. DevOps. Methodology for the Team
    1.10.3. Avoiding Niches

Module 2. DevOps and Continuous Integration. Advanced Practical Solutions in Software Development

2.1. Software Delivery Flow
    2.1.1. Identification of Actors and Artifacts
    2.1.2. Software Delivery Flow Design
    2.1.3. Software Delivery Flow Inter-Stage Requirements
2.2. Process Automation
    2.2.1. Continuous Integration
    2.2.2. Continuous Deployment
    2.2.3. Environment Configuration and Secret Management
2.3. Declarative Pipelines
    2.3.1. Differences Between Traditional, Code-Like and Declarative Pipelines
    2.3.2. Declarative Pipelines
    2.3.3. Declarative Pipelines in Jenkins
    2.3.4. Comparison of Continuous Integration Providers

Module 3. Database (DB) Design. Standardization and performance. Software Quality

05
Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

"

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

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

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

A learning method that is different and innovative

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

"

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

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

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

Relearning Methodology

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

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

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

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

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

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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 adapted in 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 competencies and skills in each thematic 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.

30%

10%

8%

20%

25%

4%

3%
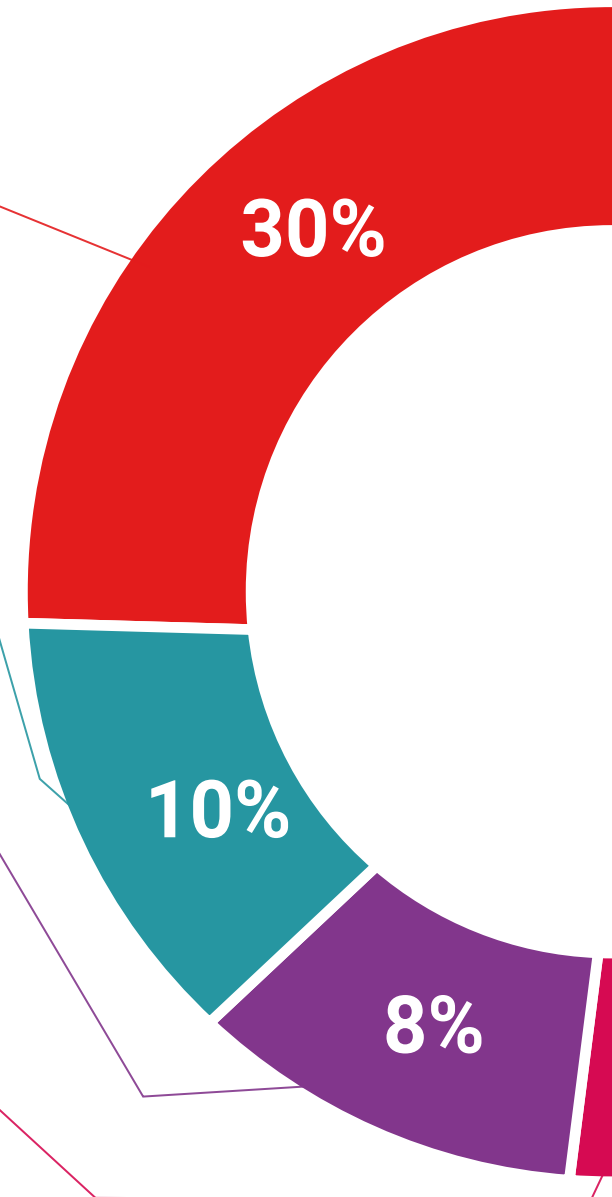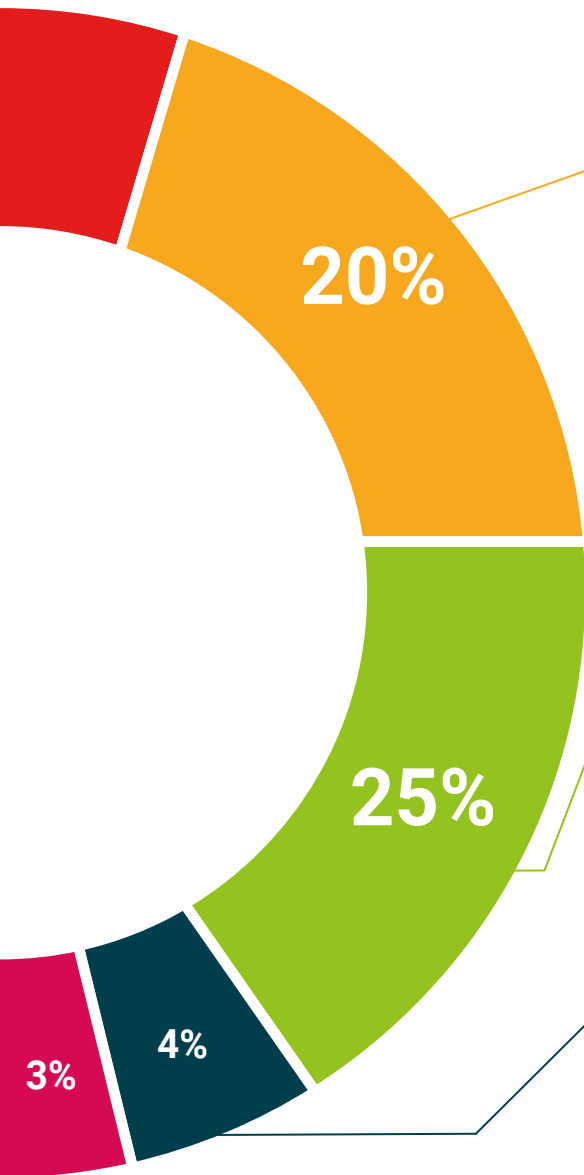
Case Studies

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

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.

Certificate

The Postgraduate Diploma in DevOps and Software Quality guarantees students, in addition to the most rigorous and up-to-date education, access to a 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 program will allow you to obtain your **Postgraduate Diploma in DevOps and Software Quality** 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** title 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 DevOps and Software Quality**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**

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Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in DevOps and Software Quality

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

Unique TECH Code: AFWORD23S   techtitute.com/certificates

*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.

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