Postgraduate Certificate

Software Engineering

tech technological university

tech technological university

Postgraduate Certificate
Software Engineering

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

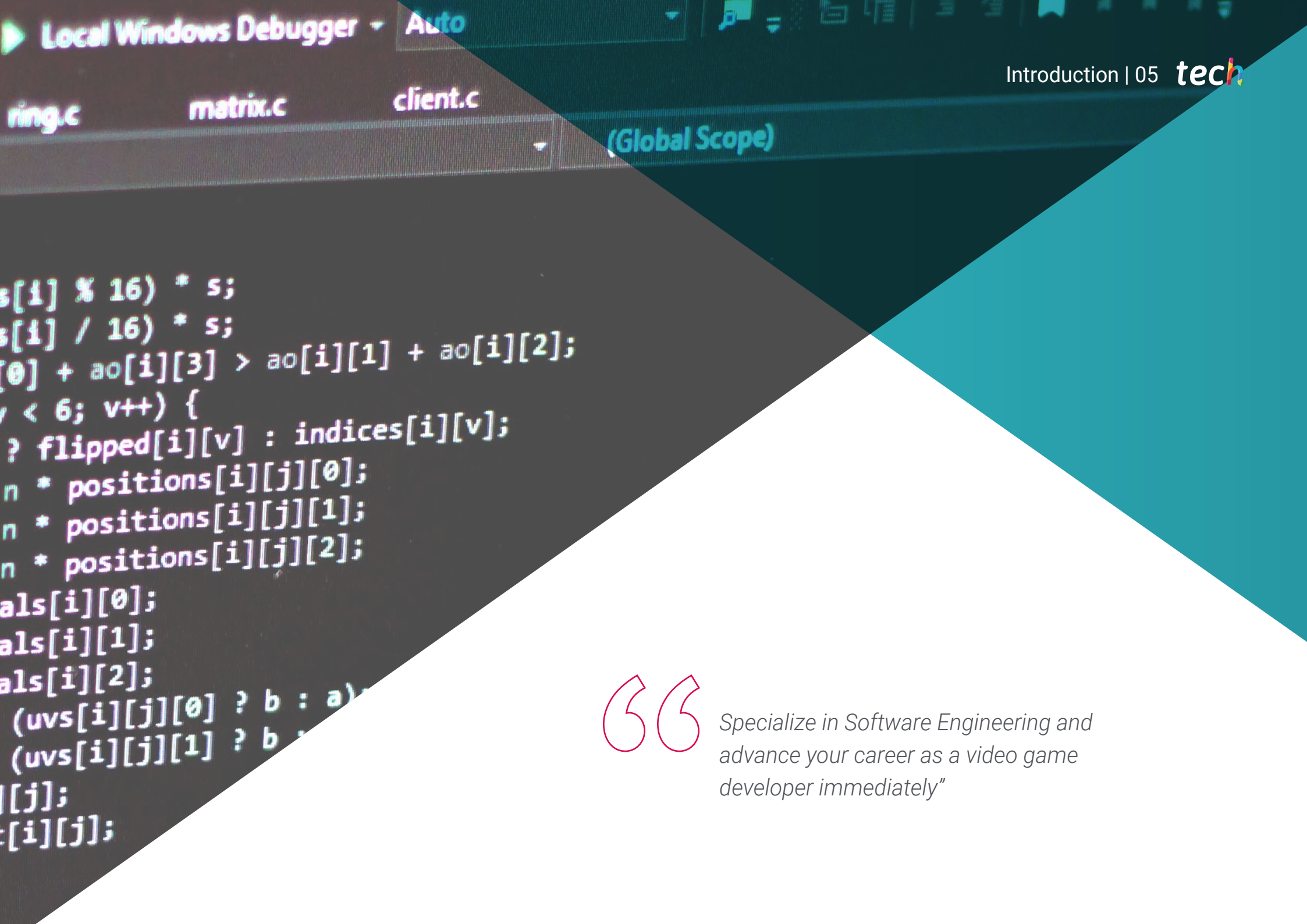
Website: www.techtitute.com/in/information-technology/postgraduate-certificate/software-engineering

Index

01

Introduction

In order to design any type of software, it is necessary to master certain knowledge that facilitates developers' work. This specific knowledge has to do with the assimilation of strategies that help programmers to write code efficiently and properly, ensuring the software meets the best quality standards. This is of great importance in the world of videogames, since correct programming can make the work in question run smoothly and without errors. That is why this course is the best option for all those students who wish to acquire the best tools for video game development, getting, thanks to them, great career opportunities.



Specialize in Software Engineering and advance your career as a video game developer immediately"

Programming video games properly is a complex task that requires a great deal of specialized knowledge. To begin with, mastering the appropriate languages is essential, but it is also important to have a deep understanding of software engineering, which allows professionals in the field to work more efficiently.

This discipline encompasses a large number of strategies and techniques, and can be extremely useful for video game programmers, since mastering it can mean having the right tools to write code cleanly and efficiently, so video games can be experienced and enjoyed without errors and with proper graphics processing and gameplay.

Thus, this Postgraduate Certificate in Software Engineering offers its students all the necessary tools to be able to program all types of videogames in the best companies in the industry worldwide with guarantees.

This **Postgraduate Certificate in Software Engineering** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- Practical cases presented by experts in Software Engineering and Programming
- The graphic, schematic, and eminently 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 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

Master the field of Software Engineering and apply all its resources to your professional career"

Program video games with great efficiency thanks to this Postgraduate Certificate"

Software Engineering will help you grow as a Video Game Developer.

This course can turn your career around. Don't wait any longer and enroll.

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

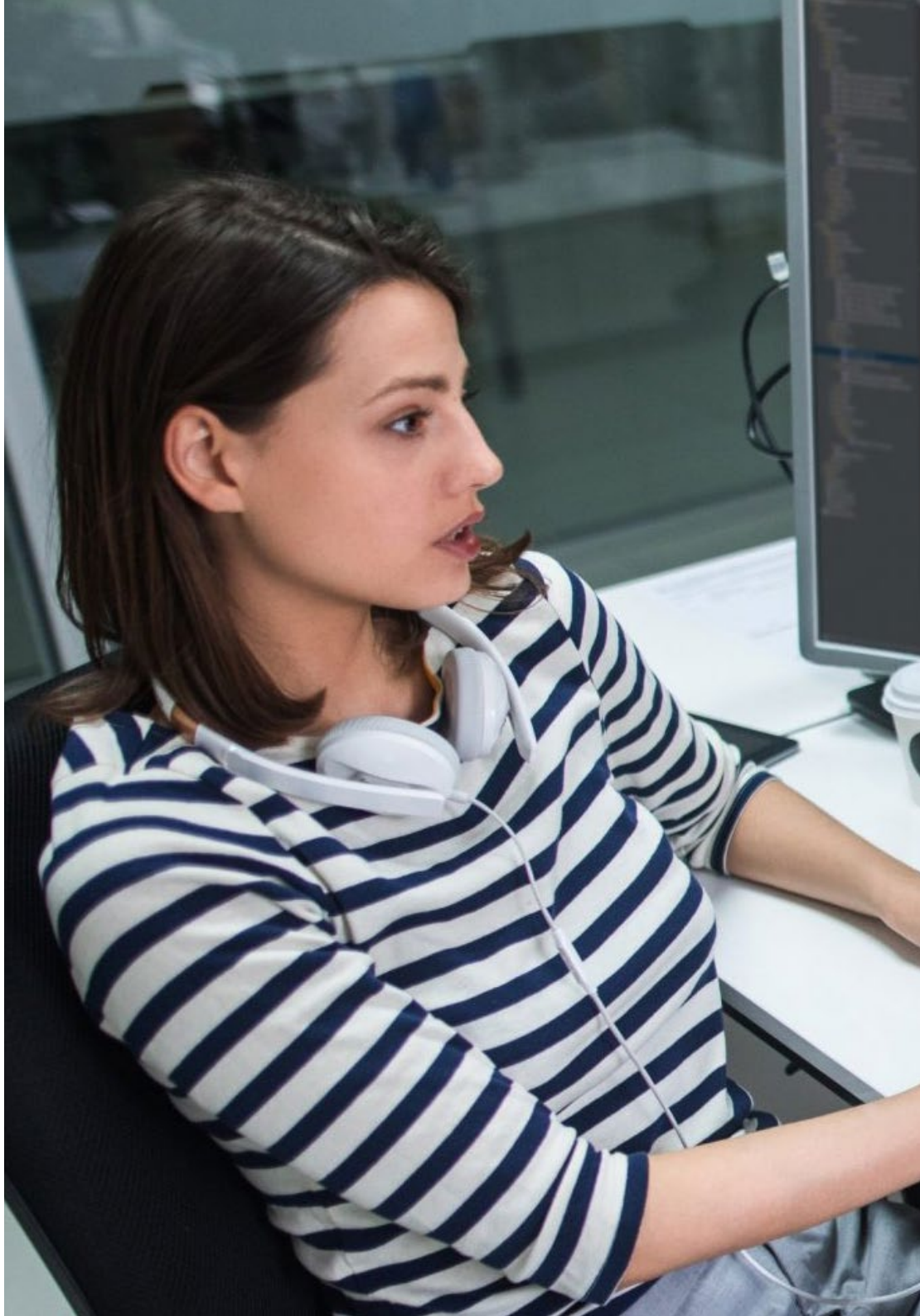
Objectives

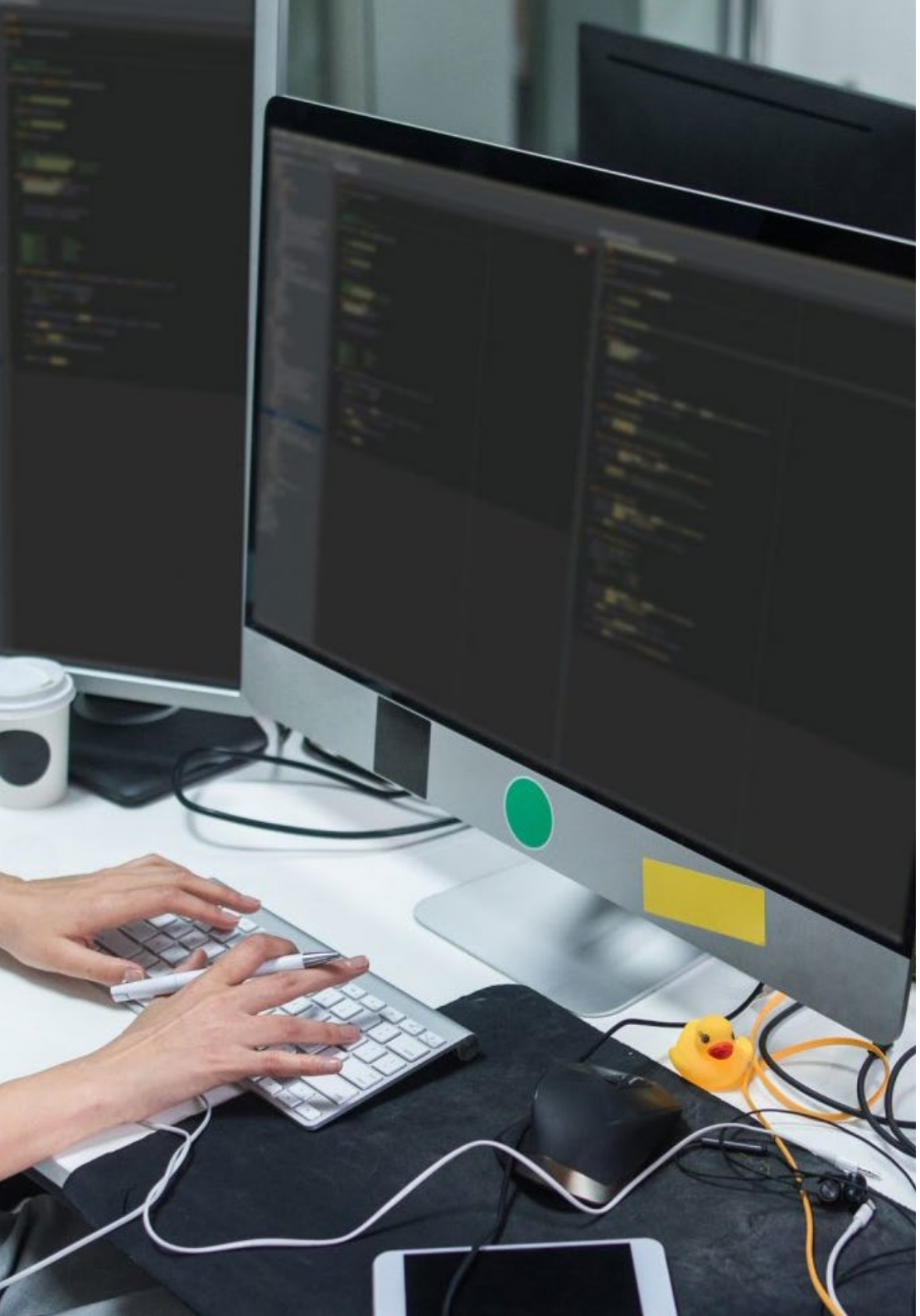
The main objective of this Postgraduate Certificate in Software Engineering is to offer students the best specialized knowledge to master the most relevant aspects of Programming applied to Videogames. They will be able to significantly improve their work as developers thanks to the skills and competencies they will acquire throughout the program. With these new tools, students will be able to become essential experts for their companies, experiencing a significant improvement to their careers.

TECH will help you achieve all your goals as a Videogame Developer”

General Objectives

- Become familiar the different Programming Languages and Methods applied to Videogames
- Learn the Fundamentals of Videogame Design and the theoretical knowledge that a Videogame Designer must have
- Apply knowledge of Software Engineering and Specialized Programming to Videogames
- Understand the role of Programming in Videogame Development





Specific Objectives

- Become familiar with the Bases of Software Engineering, as well as the Software Process and the different Development Models, including Agile Technologies
- Recognize requirements engineering, its development, elaboration, negotiation and validation in order to understand the Main Standards in terms of Software Quality and Project Management

Employ Software Engineering to improve your Code and advance professionally in the Video Game Industry"

03

Structure and Content

The contents of this Postgraduate Certificate in Software Engineering are completely focused on providing students with the necessary tools to be able to develop the best Video Games. Thus, throughout the topics that make up this program, students can learn matters such as Requirements Engineering, Design Concepts or Software Architecture Design. Thanks to this knowledge, they will be able to learn everything they need to become specialists in this type of Engineering.

The contents you needed to become a great expert in Software Engineering can be found in this Postgraduate Certificate"

Module 1. Software Engineering

1.1. Introduction to Software Engineering and Modeling
- 1.1.1. The Nature of Software
- 1.1.2. The Unique Nature of *Webapps*
- 1.1.3. Software Engineering
- 1.1.4. Software Process
- 1.1.5. Software Engineering Practice
- 1.1.6. Software Myths
- 1.1.7. How It All Begins
- 1.1.8. Object Oriented Concepts
- 1.1.9. Introduction to UML

1.2. Software Process
- 1.2.1. A General Process Model
- 1.2.2. Prescriptive Process Models
- 1.2.3. Specialized Process Models
- 1.2.4. Unified Process
- 1.2.5. Personal and Team Process Models
- 1.2.6. What Is Agility?
- 1.2.7. What Is an Agile Process?
- 1.2.8. Scrum
- 1.2.9. Agile Process Toolkit

1.3. Software Engineering Guiding Principles
- 1.3.1. Process Guiding Principles
- 1.3.2. Practice Guiding Principles
- 1.3.3. Communication Principles
- 1.3.4. Planning Principles
- 1.3.5. Modeling Principles
- 1.3.6. Building Principles
- 1.3.7. Deployment Principles

1.4. Understanding Requirements
- 1.4.1. Requirement Engineering
- 1.4.2. Establishing Bases
- 1.4.3. Requirements Inquiry
- 1.4.4. Use Case Development
- 1.4.5. Requirements Model Development
- 1.4.6. Requirements Negotiation
- 1.4.7. Requirements Validation

1.5. Requirements Modeling: Scenarios, Information and Types of Analysis
- 1.5.1. Requirements Analysis
- 1.5.2. Scenario-Based Modeling
- 1.5.3. UML Models Providing Use Cases
- 1.5.4. Concepts of Data Modeling
- 1.5.5. Class-Based Modeling
- 1.5.6. Class Diagrams

1.6. Requirements Modeling: Flow, Behavior and Patterns
- 1.6.1. Strategy-Modeling Requirements
- 1.6.2. Flow-Oriented Modeling
- 1.6.3. Status Diagrams
- 1.6.4. Creating Behavior Models
- 1.6.5. Sequence Diagrams
- 1.6.6. Communication Diagrams
- 1.6.7. Requirements Modeling Patterns

1.7. Design Concepts
- 1.7.1. Design in Software Engineering
- 1.7.2. Design Process
- 1.7.3. Design Concepts
- 1.7.4. Object-Oriented Design Concepts
- 1.7.5. Design Model

1.8. Architecture Design
- 1.8.1. Software Design
- 1.8.2. Architectural Genres
- 1.8.3. Architectural Styles
- 1.8.4. Architectural Design
- 1.8.5. Evolution of Alternative Designs for Architecture
- 1.8.6. Mapping Architecture Using Data Flows

1.9. Component-Level and Pattern-Based Design
- 1.9.1. What Is a Component?
- 1.9.2. Class-Based Component Design
- 1.9.3. Producing Component-Level Designs
- 1.9.4. Traditional Component Design
- 1.9.5. Component-Based Development
- 1.9.6. Design Patterns
- 1.9.7. Pattern-Based Software Design
- 1.9.8. Architectural Patterns
- 1.9.9. Component-Level Design Patterns
- 1.9.10. User Interface Design Patterns

1.10. Software Quality and Project Administration
- 1.10.1. Quality
- 1.10.2. Software Quality
- 1.10.3. The Software Quality Dilemma
- 1.10.4. Achieving Software Quality
- 1.10.5. Ensuring Software Quality
- 1.10.6. The Administrative Spectrum
- 1.10.7. The Staff
- 1.10.8. The Product
- 1.10.9. The Process
- 1.10.10. The Project
- 1.10.11. Principles and Practices

04

Methodology

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

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

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

Case Study to contextualize all content

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

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

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

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

A learning method that is different and innovative

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

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

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

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

Relearning Methodology

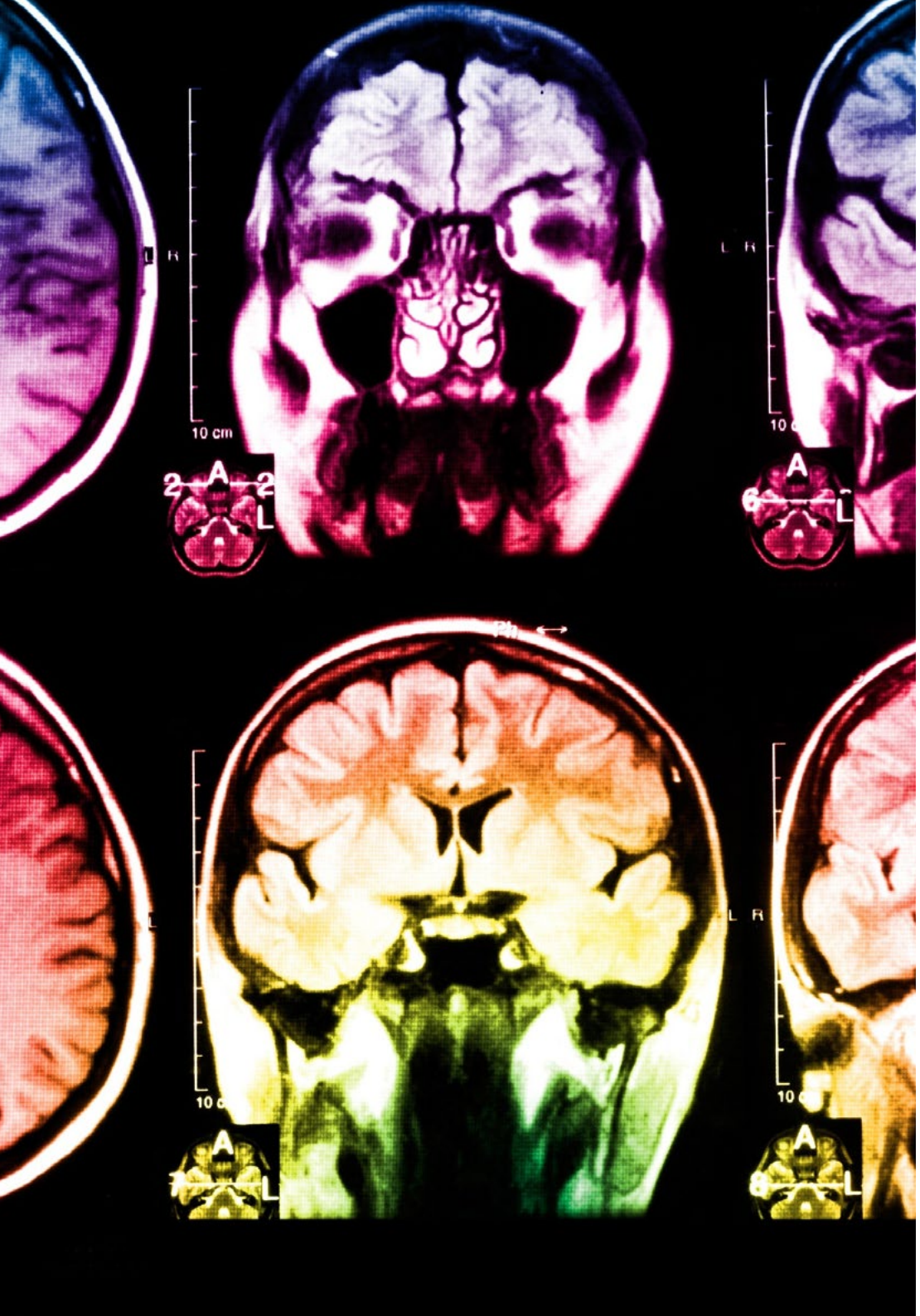
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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

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

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

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



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

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

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

This program offers the best educational material, prepared with professionals in mind:

Study Material

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

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

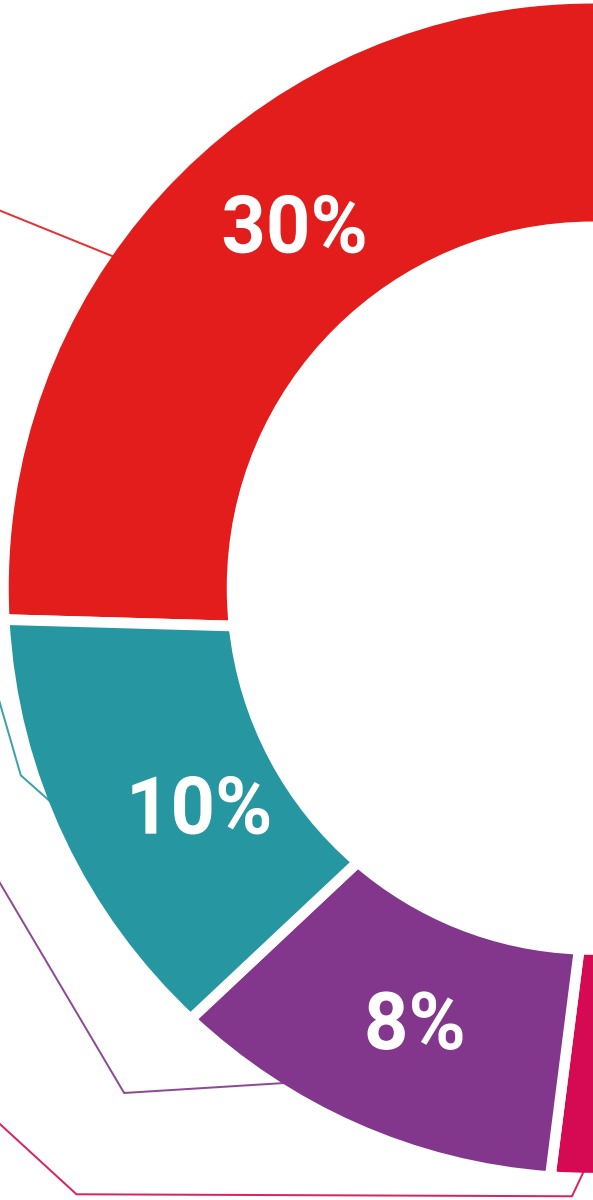
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

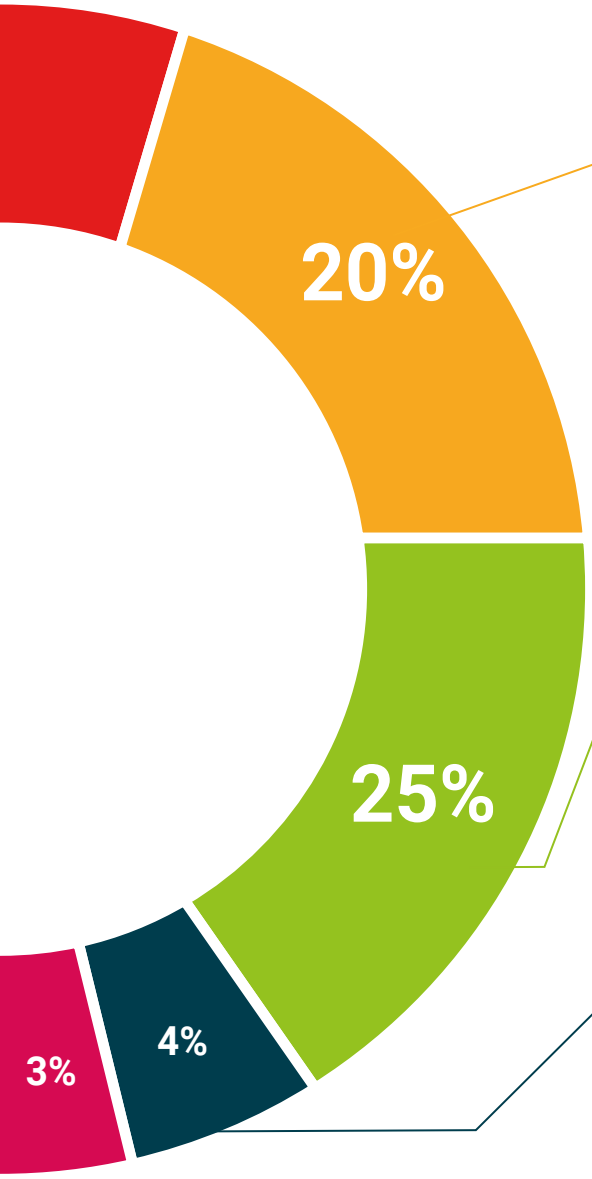
Practising Skills and Abilities

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

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

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

Interactive Summaries

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

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

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

05

Certificate

The Postgraduate Certificate in Software Engineering guarantees, in addition to the most rigorous and up-to-date training, access to a qualification issued by TECH Technological University.

Successfully complete this training program and receive your certificate without travel or laborious paperwork"

This **Postgraduate Certificate in Software Engineering** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Certificate in Software Engineering**

Official Number of Hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Software Engineering

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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.

tech technological university

Postgraduate Certificate
Software Engineering

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

Postgraduate Certificate
Software Engineering

tech technological university