Postgraduate Certificate

Software Engineering Processes

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Postgraduate Certificate
Software Engineering Processes

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

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

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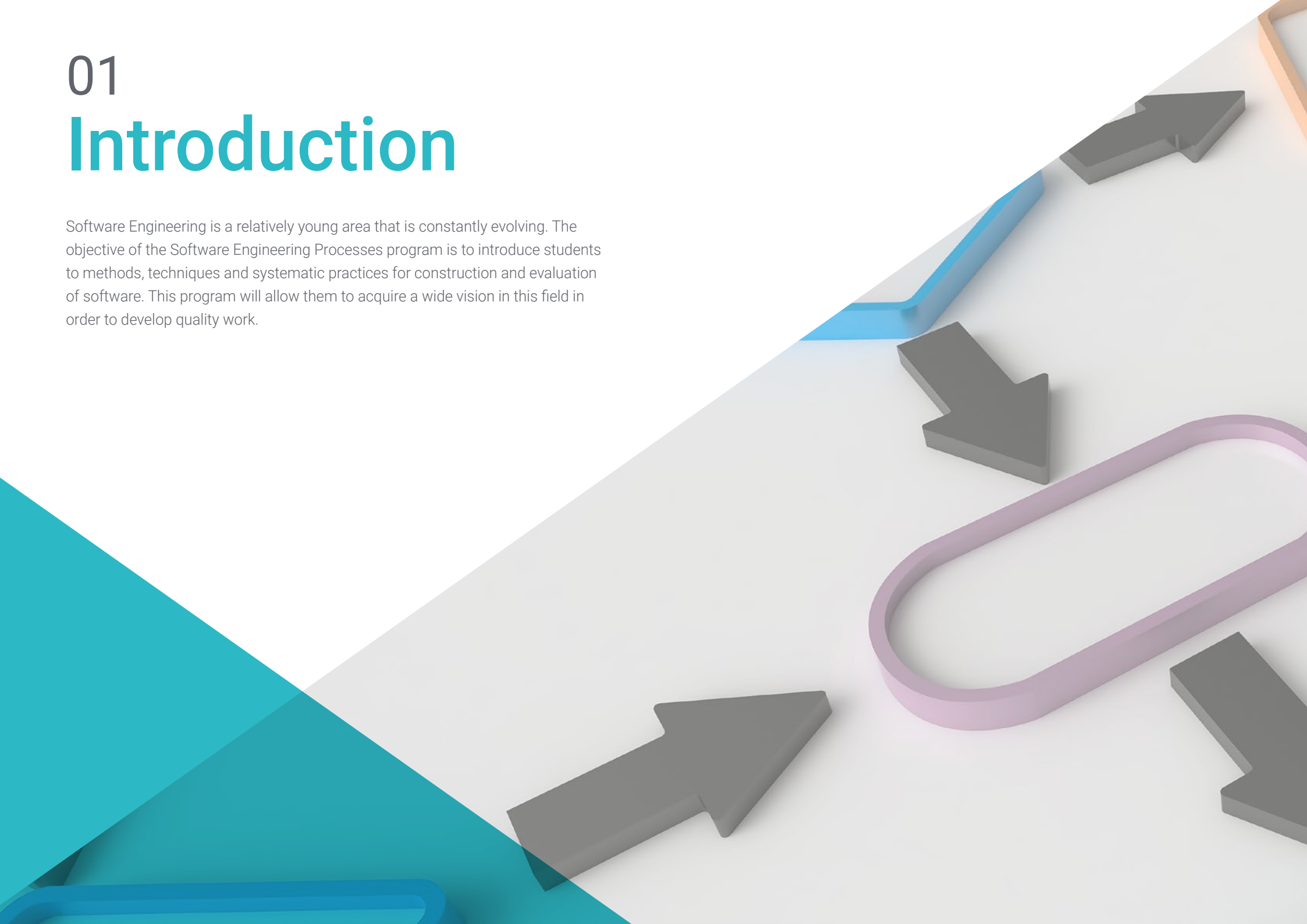
01

Introduction

Software Engineering is a relatively young area that is constantly evolving. The objective of the Software Engineering Processes program is to introduce students to methods, techniques and systematic practices for construction and evaluation of software. This program will allow them to acquire a wide vision in this field in order to develop quality work.



IT professionals must continue their specialization to adapt to new developments in this field"

The teaching team of this Postgraduate Certificate in Software Engineering Processes has made a careful selection of each topics of this training to offer the student a study opportunity as complete as possible and always linked to current events.

The program covers all the aspects related to software development: framework, unified process, planning, software architecture, etc. The graphical user interface and web application design is another important aspect of this Postgraduate Certificate, among other issues that will enable the professional for this work.

This program provides students with specific tools and skills to successfully develop their professional activity in the wide environment of Software Engineering processes. It works on key competencies such as knowledge of the day-to-day reality and work in different IT areas and develops responsibility for the monitoring and supervision of work, as well as specific skills within this field.

In addition, as it is a 100% online Postgraduate Certificate, the student is not conditioned by fixed schedules or need to move to another physical location, but can access contents at any time of the day, balancing their work or personal life with their academic life.

This **Postgraduate Certificate in Software Engineering Processes** contains the most complete and up-to-date program on the market. The most important features include:

- Development of case studies presented by software engineering experts
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies in software engineering processes
- 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

Don't miss the opportunity to take this Postgraduate Certificate in Software Engineering Processes with us. It's the perfect opportunity to advance your career"

This Postgraduate Certificate is the best investment you can make in selecting an upgrade program to update your knowledge in Software Engineering Processes"

This Postgraduate Certificate has the best didactic material, which will allow you a contextual study that will facilitate your learning.

This 100% online Postgraduate Certificate will allow you to balance your studies with your professional work while increasing your knowledge in this field.

The teaching staff includes professionals from the field of design, who bring their experience to this specialization program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive education programmed to prepare for real situations.

The program design focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in Software Engineering Processes.

02

Objectives

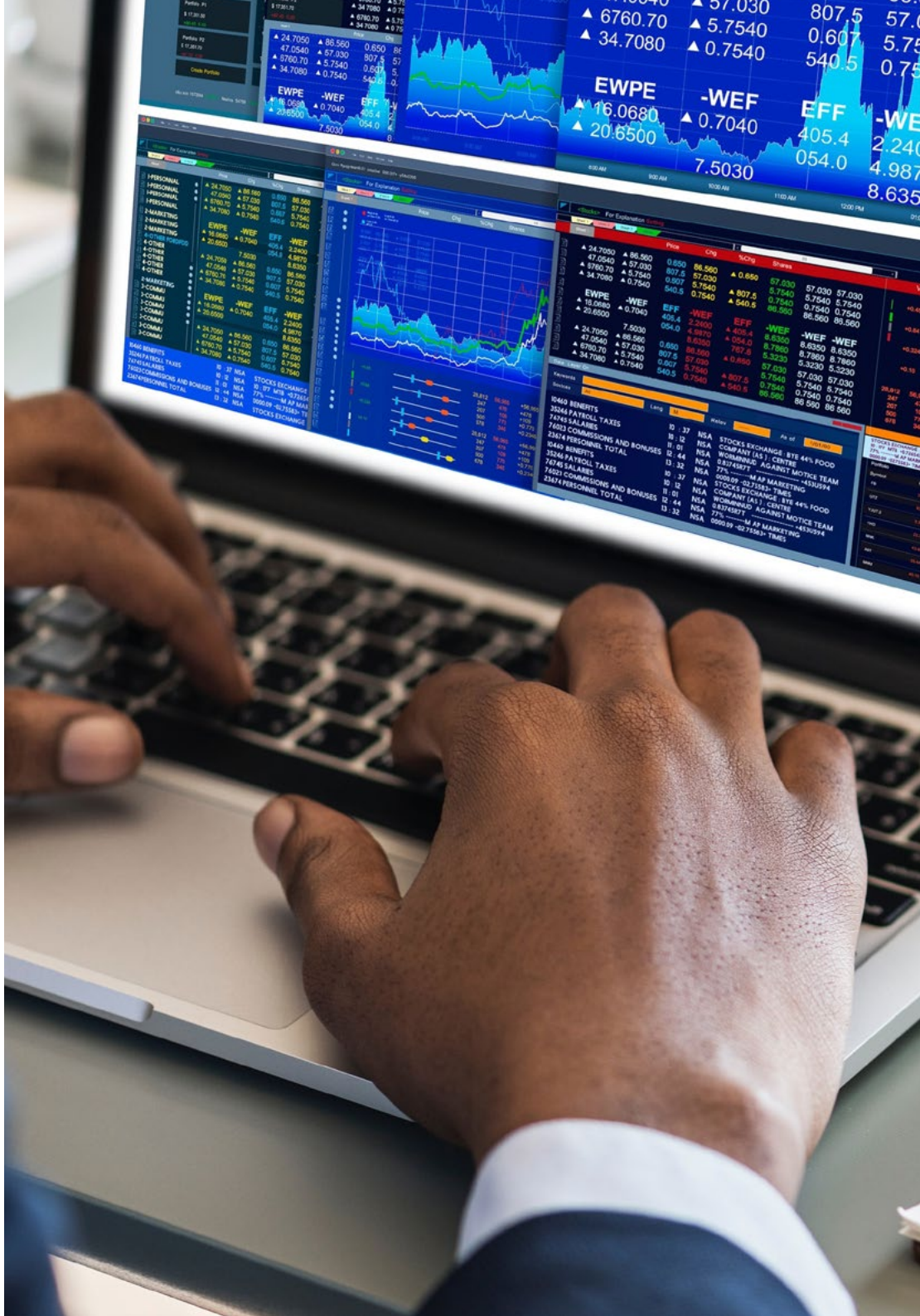
The Software Engineering Processes program is oriented to facilitate professional's performance in this field so that they can acquire and learn about main novelties in this area of computer science.

This is the best option to learn about latest advances in Software Engineering processes"

General Objective

- Scientific and technological education, as well as preparation for the professional practice of Software Engineering, all with a transversal and versatile academic experience adapted to new technology and innovations in this field

Join our community of students and learn with the best. You will increase your professionalism in a comfortable way"



Specific Objectives

- To deepen software development process improvement and software quality improvement using ISO/IEC standards
- To understand and apply prototyping as an essential part of the development process.
- To know software engineering framework and the ISO/IEC 12207 standard
- To learn characteristics of unified software development process and planning in the context of agile software development
- To learn different styles of distributed software design and service-oriented software architectures
- To learn essential concepts in graphical user interface design
- To understand the basics of web application development

03

Structure and Content

The content structure has been designed by the best professionals in Software Engineering sector, with extensive experience and recognized prestige in the profession.

We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too"

Module 1. Software Engineering Processes

1.1. Software Engineering Framework
- 1.1.1. Software Features
- 1.1.2. The Main Processes in Software Engineering
- 1.1.3. Software Development Process Models
- 1.1.4. Standard Reference Framework for the Software Development Process: The ISO/IEC 12207 Standard

1.2. Unified Software Development Process
- 1.2.1. The Unified Process
- 1.2.2. Dimensions of the Unified Process
- 1.2.3. Case Studies Driven Development Process
- 1.2.4. Fundamental Workflows of Unified Processes

1.3. Planning in the Context of Agile Software Development
- 1.3.1. Characteristics of Agile Software Development
- 1.3.2. Different Planning Time Horizons in Agile Development
- 1.3.3. Scrum Agile Development Framework and Planning Time Horizons
- 1.3.4. User Stories as a Planning and Estimating Unit
- 1.3.5. Common Techniques for Deriving an Estimate
- 1.3.6. Scales for Interpreting Estimates
- 1.3.7. Planning Poker
- 1.3.8. Common Scheduling Types: Delivery Scheduling and Iteration Scheduling

1.4. Distributed Software Design Styles and Service-Oriented Software Architectures
- 1.4.1. Communication Models in Distributed Software Systems
- 1.4.2. Middleware
- 1.4.3. Architecture Patterns for Distributed Systems
- 1.4.4. General Software Service Design Process
- 1.4.5. Design Aspects of Software Services
- 1.4.6. Composition of Services
- 1.4.7. Web Services Architecture
- 1.4.8. Infrastructure and SOA Components

1.5. Introduction to Model Driven Software Development
- 1.5.1. The Model Concept
- 1.5.2. Model-Driven Software Development
- 1.5.3. MDA Model-Driven Development Framework
- 1.5.4. Elements of a Transformation Model

1.6. Graphical User Interface Design
- 1.6.1. Principles of User Interface Design
- 1.6.2. Architectural Design Patterns for Interactive Systems: Model View Controller (MVC)
- 1.6.3. UX User Experience
- 1.6.4. User-Centered Design
- 1.6.5. Graphical User Interface Analysis and Design Process
- 1.6.6. Usability of User Interfaces
- 1.6.7. Accessibility in User Interfaces

1.7. Web Application Design
- 1.7.1. Characteristics of Web Applications
- 1.7.2. Web Application User Interface
- 1.7.3. Navigation Design
- 1.7.4. Basic Interaction Protocol for Web Applications
- 1.7.5. Architecture Styles for Web Applications

1.8. Software Testing Strategies and Techniques and Software Quality Factors
- 1.8.1. Testing Strategies
- 1.8.2. Test Case Designs
- 1.8.3. Cost-quality relation
- 1.8.4. Quality Models
- 1.8.5. ISO/IEC 25000 Family of Standards (SQuaRE)
- 1.8.6. Product Quality Model (ISO 2501n)
- 1.8.7. Data Quality Models (ISO 2501n)
- 1.8.8. Software Quality Management

1.9. Introduction to Software Engineering Metrics
- 1.9.1. Basic Concepts: Measurements, Metrics and Indicators
- 1.9.2. Types of Metrics in Software Engineering
- 1.9.3. The Measurement Process
- 1.9.4. ISO 25024. External and Quality Metrics in Use
- 1.9.5. Object-Oriented Metrics

1.10. Software Maintenance and Reengineering
- 1.10.1. Maintenance Process
- 1.10.2. Standard Maintenance Process Framework. ISO/EIEC 14764
- 1.10.3. Software Reengineering Process Model
- 1.10.4. Inverse Engineering

This Postgraduate Certificate will allow you to advance your career in a comfortable way"

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

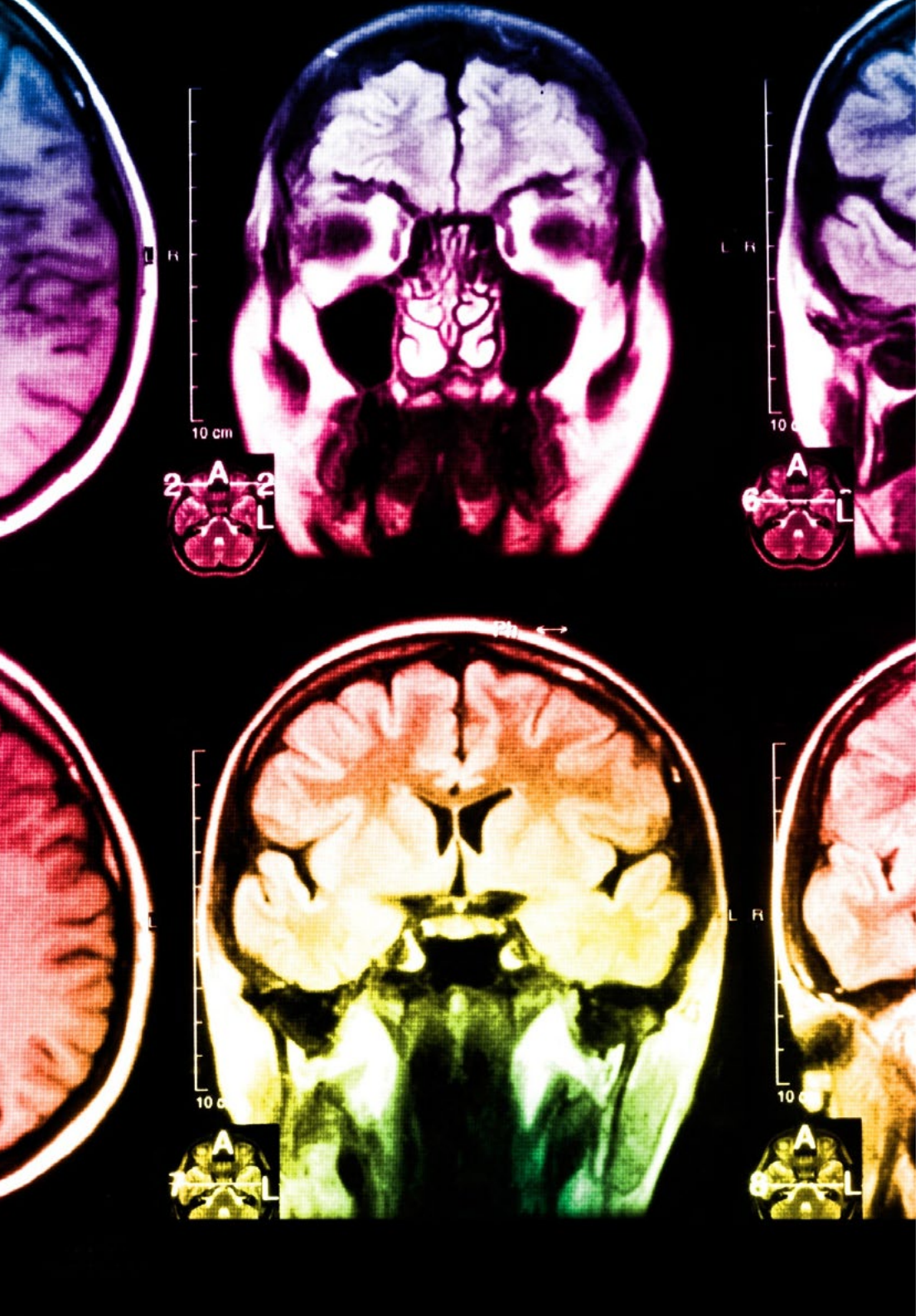
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

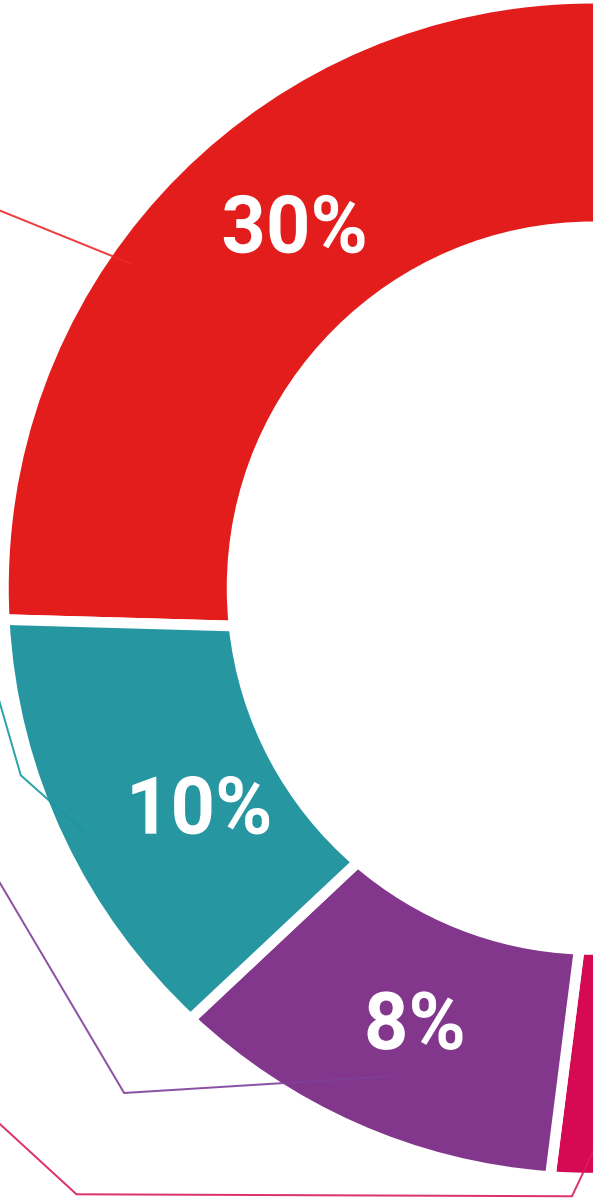
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

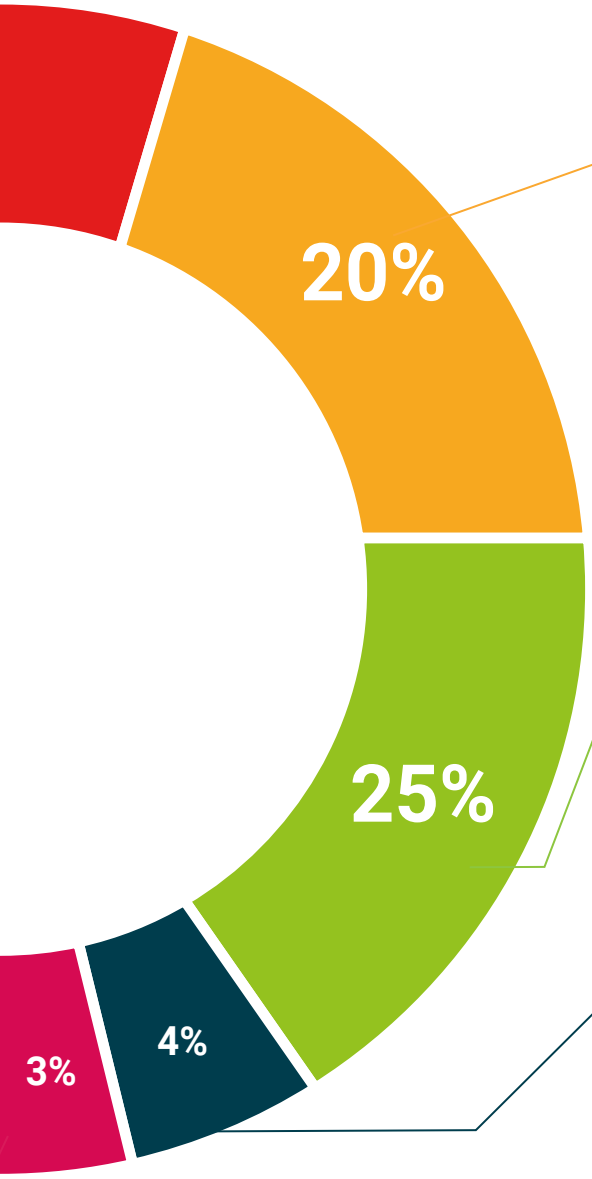
Practising Skills and Abilities

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 Processes guarantees, in addition to the most rigorous and updated training, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Software Engineering Processes** contains the most complete and updated educational program in 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 express the qualification obtained in the Postgraduate Certificate, and will meet the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Software Engineering Processes**

Official No. of Hours: **150 h.**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Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Software Engineering Processes

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

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.

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