Postgraduate Certificate

IT Security

tech technological university

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Postgraduate Certificate

IT Security

- 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/it-security

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01

Introduction

Specialize in IT with this intensive program taught by experts with extensive experience in the field. You will develop your skills and knowledge, in a practical and 100% online way, with the best didactic resources. A unique opportunity to give your career the boost it needs.

This Postgraduate Certificate will allow you to update your knowledge in IT Security in a practical way, 100% online, without renouncing to the maximum academic rigor”

This program is aimed at those interested in attaining a higher level of knowledge in IT Security. The main objective is for students to specialize their knowledge in simulated work environments and conditions in a rigorous and realistic manner so they can later apply it in the real world.

This program will prepare scientifically and technologically, as well as to develop the professional practice of IT engineering, with a transversal and versatile approach adapted to the new technologies and innovations in this field. Students will gain extensive knowledge of IT Security from professionals in the field.

The students will be able to take the opportunity and study this program in a 100% online format, without neglecting their obligations. Update your knowledge and obtain your Postgraduate Certificate to continue growing personally and professionally.

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

- Development of 100 simulated scenarios presented by experts in IT Security
- The graphic, schematic and practical contents with which they are conceived provide scientific and practical information on IT Security
- News on latest developments in IT Security
- It contains practical exercises where the self-assessment process can be carried out to improve learning
- Interactive learning system based on the case method and its application to real practice
- All of this will be complemented by 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

Learn the latest techniques and strategies with this program and achieve the success as an IT Engineer"

Learn about IT Security with this intensive program, from the comfort of your home"

Take advantage of the latest educational technology to get up to date on IT Security without leaving your home.

Learn about the latest techniques in IT Security from experts in the field.

It includes in its teaching staff professionals belonging to the field of education, who bring to this program their work experience, in addition to recognized specialists belonging to reference 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 an immersive program designed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. To that end, they will be assisted by an innovative, interactive video system created by renowned experts in IT Security who have extensive teaching experience.

02

Objectives

The objective of this program is to provide IT professionals with the knowledge and skills necessary to carry out their activity using the most advanced protocols and techniques of the moment. Through a work approach that is totally adaptable to the student, this Postgraduate Certificate will progressively lead the students to acquire the competencies that will propel them to a higher professional level.

Achieve the level of knowledge you desire and master the fundamental concepts in IT Security with this high-level educational program"

General Objectives

- Prepare scientifically and technologically, as well as to develop the professional practice of IT Security , with a transversal and versatile approach adapted to the new technologies and innovations in this field
- Obtain wide knowledge in the field of computer engineering, structure of computers and in IT Security including the mathematical, statistical and physical basis which is essential in Engineering

Achieve professional success as an IT Engineer with this intensive program, developed by professionals with extensive experience in the sector"

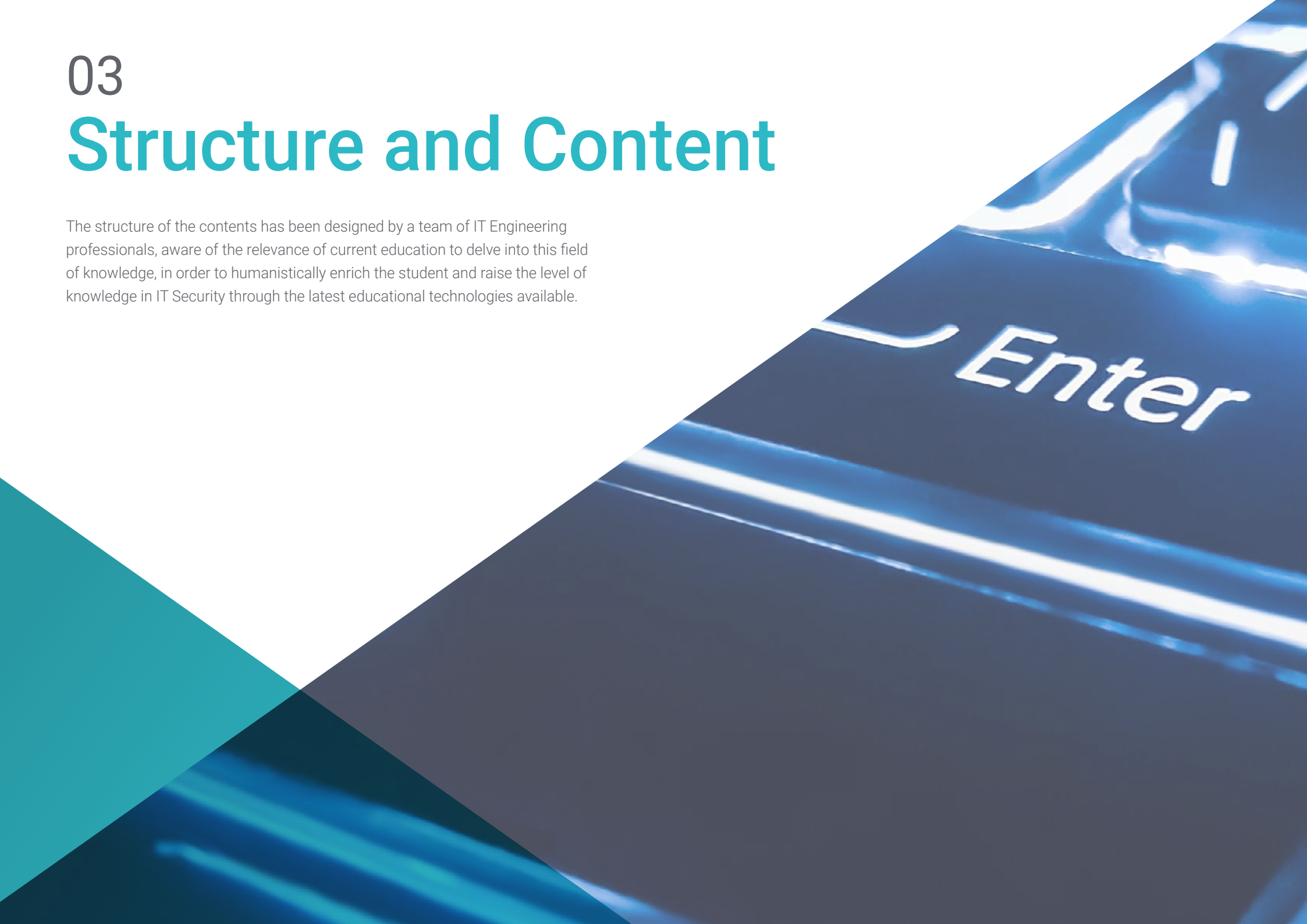
Specific Objectives

- Obtain a global perspective on security, cryptography and classical cryptanalysis
- Understand the fundamentals of symmetric cryptography and asymmetric cryptography, as well as their main algorithms
- Analyze the nature of network attacks and the different types of security architectures
- Understand the various techniques of system protection and secure code development
- Know the essential components of *botnets* and spam, as well as *malware* and malicious code
- Lay the foundations for forensic analysis in the world of software and computer audits

03

Structure and Content

The structure of the contents has been designed by a team of IT Engineering professionals, aware of the relevance of current education to delve into this field of knowledge, in order to humanistically enrich the student and raise the level of knowledge in IT Security through the latest educational technologies available.



This Postgraduate Certificate in IT Security contains the most complete and up-to-date educational program on the market"

Module 1. Information Systems Security

1.1. A Global Perspective on Security, Cryptography and Classical Cryptoanalysis
- 1.1.1 IT Security: Historical Perspective
- 1.1.2 But what exactly is meant by Security?
- 1.1.3 History of Cryptography
- 1.1.4 Substitution Ciphers
- 1.1.5 Case Study: The Enigma Machine

1.2. Symmetric Cryptography
- 1.2.1 Introduction and Basic Terminology
- 1.2.2 Symmetric Encryption
- 1.2.3 Modes of Operation
- 1.2.4 DES
- 1.2.5 The New AES Standard
- 1.2.6 Encryption in Flow
- 1.2.7 Cryptanalysis

1.3. Asymmetric Cryptography
- 1.3.1 Origins of Public Key Cryptography
- 1.3.2 Basic Concepts and Operation
- 1.3.3 The RSA Algorithm
- 1.3.4 Digital Certificates
- 1.3.5 Key Storage and Management

1.4. Network Attacks
- 1.4.1 Network Threats and Attacks
- 1.4.2 Enumeration
- 1.4.3 Traffic Interception: *Sniffers*
- 1.4.4 Denial of Service Attacks
- 1.4.5 ARP Poisoning Attacks

1.5. Security Architectures
- 1.5.1 Traditional Security Architectures
- 1.5.2 *Secure Socket Layer*: SSL
- 1.5.3 SSH Protocol
- 1.5.4 Virtual Private Networks (VPN)
- 1.5.5 External Storage Unit Protection Mechanisms
- 1.5.6 Hardware Protection Mechanisms

1.6. System Protection Techniques and Secure Code Development
- 1.6.1 Operational Security
- 1.6.2 Resources and Controls
- 1.6.3 Monitoring
- 1.6.4 Intrusion Detection Systems
- 1.6.5 *Host* IDS
- 1.6.6 Network IDS
- 1.6.7 Signature-Based IDS
- 1.6.8 Lure Systems
- 1.6.9 Basic Security Principles in Code Development
- 1.6.10. Failure Management
- 1.6.11. Public Enemy Number 1: Buffer Overflows
- 1.6.12. Cryptographic Botches

1.7. *Botnets* and Spam
- 1.7.1 Origin of the Problem
- 1.7.2 Spam Process
- 1.7.3 Sending Spam
- 1.7.4 Refinement of Mailing Lists
- 1.7.5 Protection Techniques
- 1.7.6 Third-Party Antispam Services
- 1.7.7 Study Cases
- 1.7.8 Exotic Spam

1.8. Web Auditing and Attacks
- 1.8.1 Information Gathering
- 1.8.2 Attack Techniques
- 1.8.3 Data Science

1.9. *Malware* and Malicious Code
- 1.9.1 What is *Malware*?
- 1.9.2 Types of *Malware*
- 1.9.3 Virus
- 1.9.4 Cryptovirus
- 1.9.5 Worms
- 1.9.6 *Adware*
- 1.9.7 *Spyware*
- 1.9.8 *Hoaxes*
- 1.9.9 *Phishing*
- 1.9.10. Trojans
- 1.9.11. The Economy of *Malware*
- 1.9.12. Possible Solutions

1.10. Forensic Analysis
- 1.10.1 Evidence Collection
- 1.10.2 Evidence Analysis
- 1.10.3 Antiforensic Techniques
- 1.10.4 Case Study

A unique, key, and decisive educational experience to boost your professional development"

04

Methodology

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

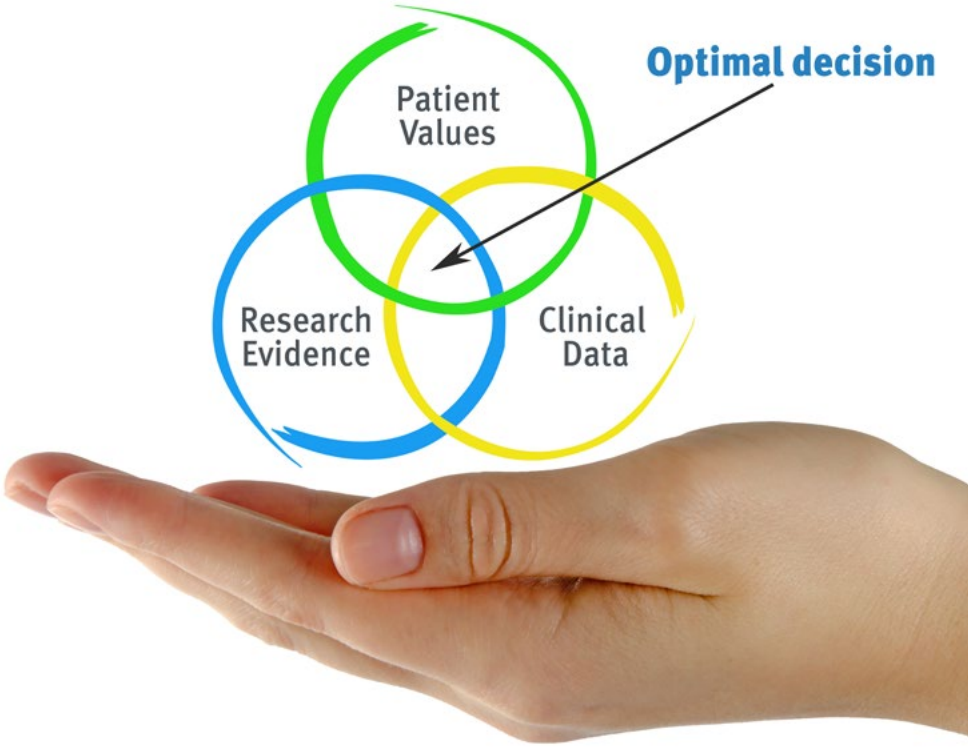
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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

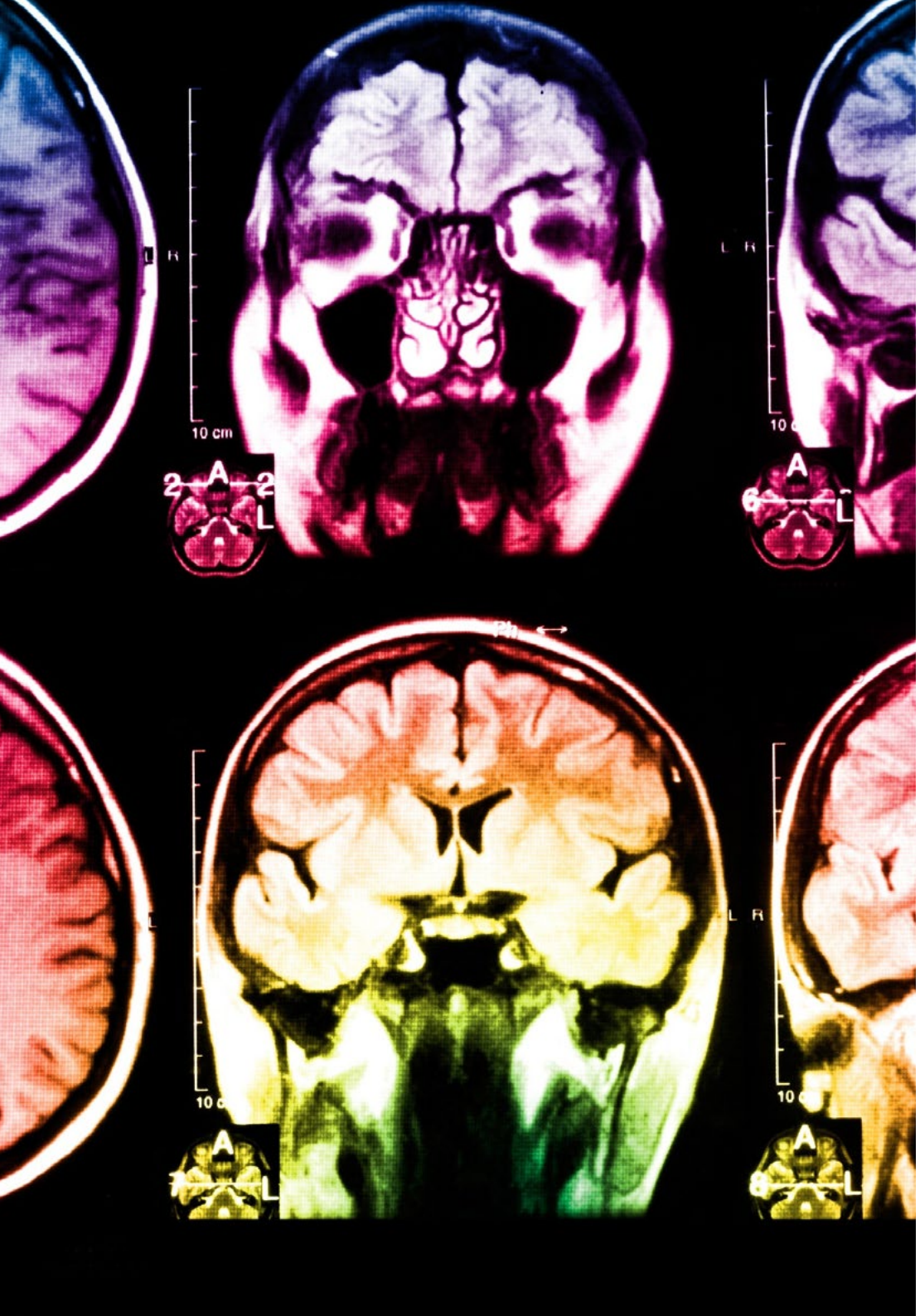
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

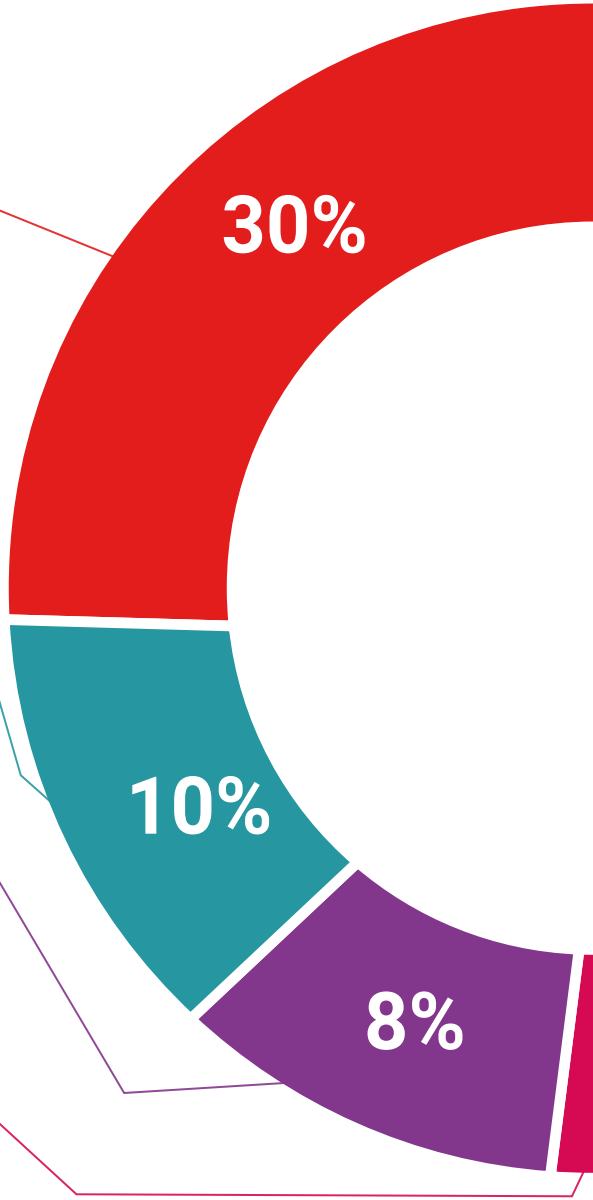
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

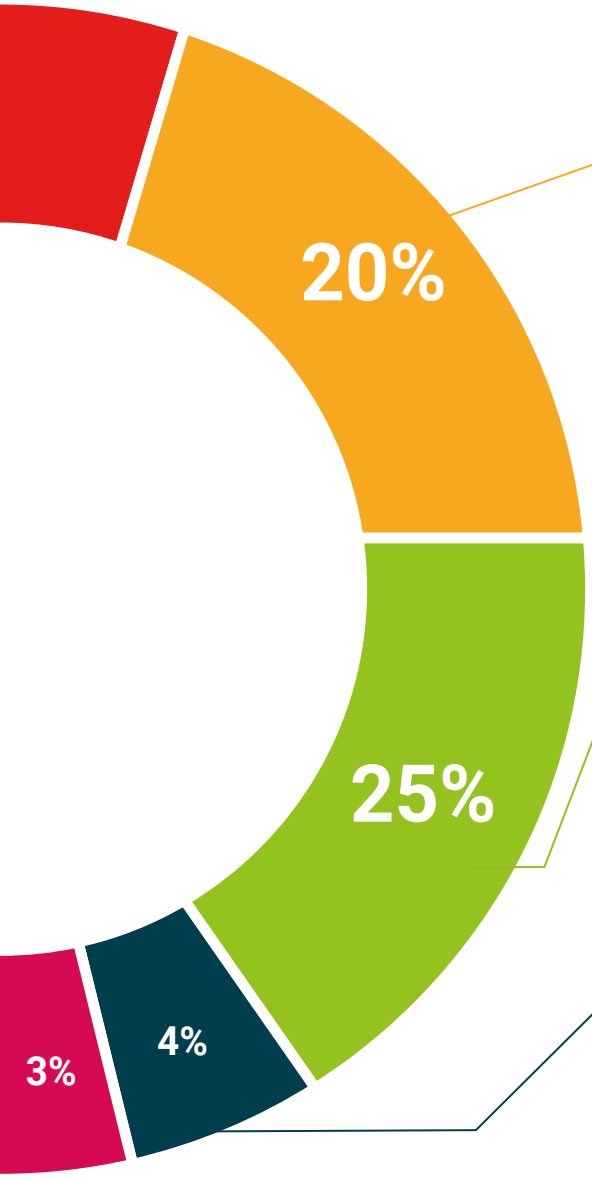
Practising Skills and Abilities

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 IT Security guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in IT Security** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate 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 IT Security**

Official Nº 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

IT Security

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 diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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