

Postgraduate Certificate Forensic Analysis in Cybersecurity



Postgraduate Certificate Forensic Analysis in Cybersecurity

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

Website: www.techtute.com/us/information-technology/postgraduate-certificate/forensic-analysis-cybersecurity

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01

Introduction

The Cybersecurity Forensic Analysis program is a highly educational tool that will help the Computer Engineer to investigate a cybersecurity incident once it has occurred. A complete process that will provide the student with the necessary knowledge to obtain, analyze and report all their findings. It offers the highest quality program and was created to train the best experts in the industry.



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*Acquire the skills of a specialist in
Forensic Analysis in Cybersecurity”*

Computer crimes, like any crime, trigger an investigation to provide the necessary data to establish the legal consequences of their execution.

From the moment a forensic scientist encounters a scenario, and decides, in a non-destructive way, to acquire evidence, they need guidelines to relate the data obtained from different sources and reach irrefutable conclusions.

To be able to carry out these actions it is necessary to know the different scenarios, understand the different technologies and be able to explain them in different languages depending on the target audience of the report.

The number of different crimes that a forensic expert will face means that they need expertise, perspicacity and serenity to undertake this extremely important task, as the verdict of a trial may depend on their correct performance.

This Postgraduate Certificate offers the best quality materials for learning the contents that professionals must incorporate to their professional practice in this sector.

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

- ◆ The development of case studies presented by cybersecurity experts
- ◆ 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 in Advanced Practice Nursing
- ◆ 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 to intervene at the scene, with the elements of crime, performing a safe and solvent task with the most developed tools of forensic analysis in the computer area"

“*You will be able to find out the source of a problem, or a crime, and recover data deleted for legal or merely practical purposes*”

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 specialization programmed 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. This will be done with the help of an innovative system of interactive videos made by renowned experts.

A high education process created to be affordable and flexible, with the most interesting methodology of online teaching.

Study through a practice-focused Postgraduate Certificate to boost your skills to the level of a specialist.



02

Objectives

This Postgraduate Certificate in Forensic Analysis in Cybersecurity provides students with skills to work efficiently in this field. With realistic and highly realistic objectives, this study program has been designed to progressively acquire the theoretical and practical knowledge necessary for a quality intervention, while developing transversal competencies that will allow the student to face complex situations by elaborating accurate and precise answers.





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*Put your computer forensics skills to work,
a field full of job possibilities through a
process of exceptional teaching quality”*



General Objectives

- ◆ Collect all existing evidence and data to conduct a forensic report
- ◆ Analyze the data and relate it appropriately
- ◆ Preservation of evidence for a forensic report
- ◆ Duly submit the forensic report



With the most exciting study support systems available today, this program is an exceptional opportunity for professional growth"





Specific Objectives

- ◆ Identify the different elements that evidence a crime
- ◆ Generate specialized knowledge to obtain data from different media before they are lost
- ◆ Recovery of intentionally deleted data
- ◆ Analyze system logs and records
- ◆ Determine how data is duplicated so as not to alter the originals
- ◆ Substantiate the evidence for consistency
- ◆ Generate a solid and seamless report
- ◆ Present conclusions in a coherent manner
- ◆ Establish how to defend the report before the competent authority

03

Course Management

The teachers who teach this program have been selected for their exceptional competence in this field. They combine technical and practical experience with teaching experience, offering students first-class support in achieving their goals. Through them, the program offers the most direct and immediate vision of the real characteristics of the intervention in this field, achieving a contextual vision of maximum interest.



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Expert professors in Forensic Analysis in Cybersecurity will accompany you in each phase of the course and will give you the most realistic overview of this profession"

International Guest Director

Frederic Lemieux, Ph.D. is internationally recognized as an innovative expert and inspirational leader in the fields of **Intelligence, Homeland Security, Homeland Security, Cybersecurity** and **Disruptive Technologies**. His constant dedication and relevant contributions in research and education position him as a key figure in the promotion of security and understanding of today's emerging technologies. During his professional career, he has conceptualized and directed cutting-edge academic programs at several renowned institutions, such as **the University of Montreal, George Washington University and Georgetown University**.

Throughout his extensive background, he has published multiple books of great relevance, all of them related to **criminal intelligence, policing, cyber threats, and cyber threats and international security**. He has also contributed significantly to the field of Cybersecurity with the publication of numerous articles in academic journals, which examine crime control during major disasters, the fight against terrorism, intelligence agencies and police cooperation. In addition, he has been a panelist and keynote speaker at various national and international conferences, establishing himself as a reference in the academic and professional arena.

Dr. Lemieux has held editorial and evaluative roles in different academic, private and governmental organizations, reflecting his influence and commitment to excellence in his field of expertise. In this way, his prestigious academic career has led him to serve as Professor of Practice and Faculty Director of the MPS programs in **Applied Intelligence, Cybersecurity Risk Management, Technology Management and Information Technology Management** at Georgetown University.



Dr. Lemieux, Frederic

- Researcher in Intelligence, Cybersecurity and Disruptive Technologies at Georgetown University.
- Director of the Master's Program in Information Technology Management at Georgetown University
- Director of the Master in Technology Management at Georgetown University.
- Director of the Master in Cybersecurity Risk Management at Georgetown University
- Director of the Master's Program in Applied Intelligence at Georgetown University.
- Professor of Internship at Georgetown University
- PhD in Criminology from the School of Criminology, University of Montreal.
- B.A. in Sociology, Minor Degree in Psychology, University of Laval, France
- Member of: New Program Roundtable Committee, by Georgetown University

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Thanks to TECH you will be able to learn with the best professionals in the world”

Management



Ms. Fernández Sapena, Sonia

- ◆ Computer Security and Ethical Hacking Trainer. Getafe National Reference Center for Informatics and Telecommunications. Madrid
- ◆ Certified E-Council instructor. Madrid
- ◆ Trainer in the following certifications: EXIN Ethical Hacking Foundation y EXIN Cyber & IT Security Foundation. Madrid
- ◆ Accredited expert trainer by the CAM of the following certificates of professionalism: Computer Security (IFCT0190), Voice and Data Network Management (IFCM0310), Departmental Network Administration (IFCT0410), Alarm Management in Telecommunications Networks (IFCM0410), Voice and Data Network Operator (IFCM0110), and Internet Services Administration (IFCT0509)
- ◆ Colaboradora externa CSO/SSA (Chief Security Officer/Senior Security Architect). University of the Balearic Islands
- ◆ Computer Engineer. Alcalá de Henares University. Madrid
- ◆ Master in DevOps: Docker and Kubernetes. Cas Training. Madrid
- ◆ Microsoft Azure Security Technologies. E-Council. Madrid



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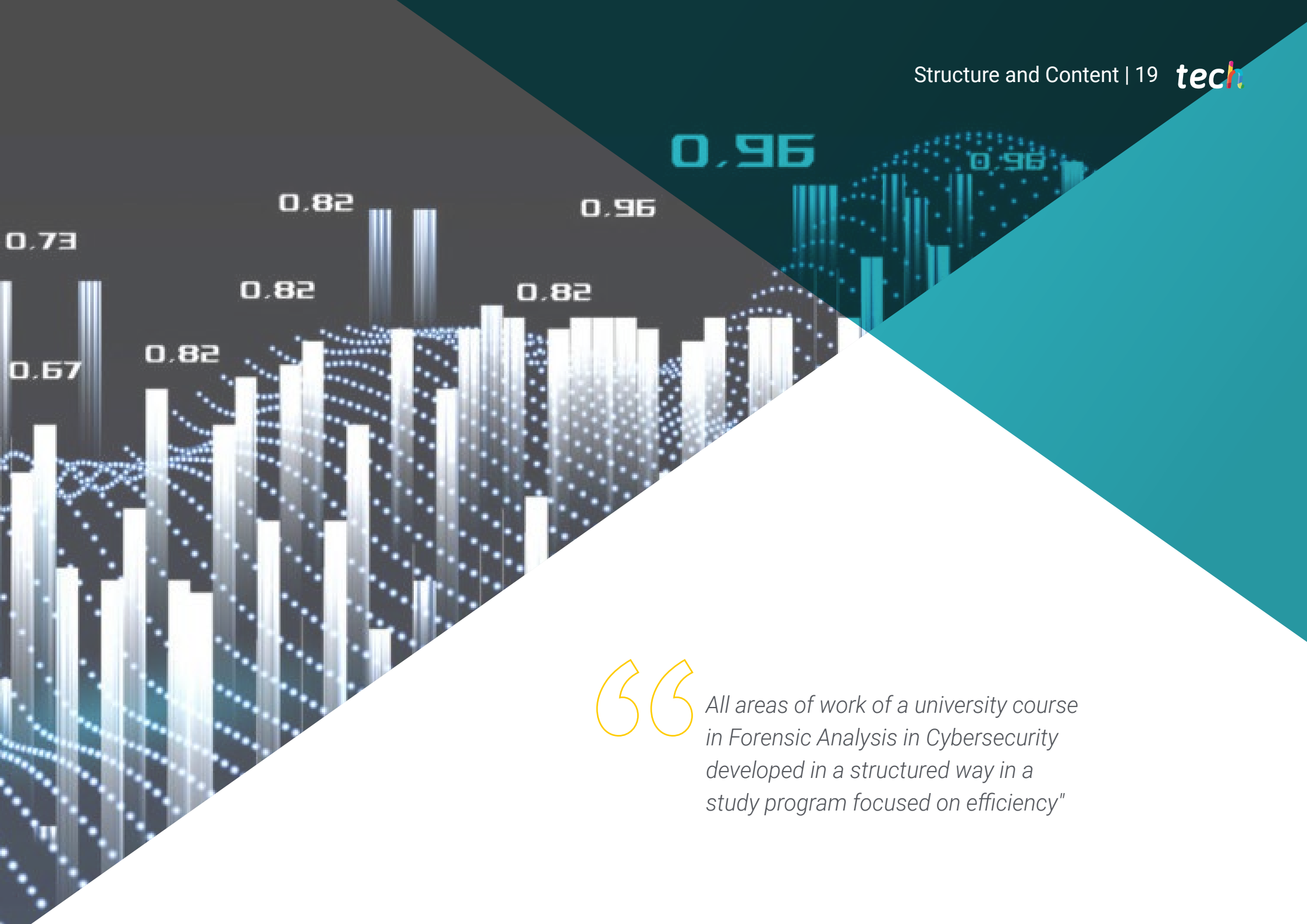
*An excellent teaching staff
for professionals who want to
improve in their career”*

04

Structure and Content

Throughout the development of the different units of this Postgraduate Certificate the student will be able to acquire all the knowledge about the intervention in the legal field in cybersecurity and computer crimes that they need. To this end, the syllabus has been structured with a view to the efficient acquisition of complementary learning, which will favor the internalization of learning and consolidate what has been studied, providing students with the capacity to intervene in an efficient manner. A high intensity and high-quality course created for the best in the industry.





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All areas of work of a university course in Forensic Analysis in Cybersecurity developed in a structured way in a study program focused on efficiency”

Module 1. Forensic Analysis

- 1.1. Data Acquisition and Duplication
 - 1.1.1. Volatile Data Acquisition
 - 1.1.1.1. System Information
 - 1.1.1.2. Network Information
 - 1.1.1.3. Volatility Order
 - 1.1.2. Static Data Acquisition
 - 1.1.2.1. Creating a Duplicate Image
 - 1.1.2.2. Preparation of a Chain of Custody Document
 - 1.1.3. Methods for Validation of Acquired Data
 - 1.1.3.1. Methods for Linux
 - 1.1.3.2. Methods for Windows
- 1.2. Evaluation and Defeat of Antiforensic Techniques
 - 1.2.1. Objectives of Antiforensic Techniques
 - 1.2.2. Data Deletion
 - 1.2.2.1. Deletion of Data and Files
 - 1.2.2.2. File Recovery
 - 1.2.2.3. Recovery of Deleted Partitions
 - 1.2.3. Password Protection
 - 1.2.4. Steganography
 - 1.2.5. Secure Device Wiping
 - 1.2.6. Encryption
- 1.3. Operating System Forensics
 - 1.3.1. Windows Forensics
 - 1.3.2. Linux Forensics
 - 1.3.3. Mac Forensics
- 1.4. Network Forensics
 - 1.4.1. Log Analysis
 - 1.4.2. Data Correlation
 - 1.4.3. Network Research
 - 1.4.4. Steps to Follow in Network Forensic Analysis



- 1.5. Web Forensics
 - 1.5.1. Investigation of Web Attacks
 - 1.5.2. Attack Detection
 - 1.5.3. IP Address Location
- 1.6. Forensic Database Analysis
 - 1.6.1. Forensic Analysis in MSSQL
 - 1.6.2. MySQL Forensic Analysis
 - 1.6.3. PostgreSQL Forensic Analysis
 - 1.6.4. Forensic Analysis in MongoDB
- 1.7. Cloud Forensics
 - 1.7.1. Types of Crimes in the Cloud
 - 1.7.1.1. Cloud as Subject
 - 1.7.1.2. Cloud as an Object
 - 1.7.1.3. Cloud as a Tool
 - 1.7.2. Challenges of Cloud Forensics
 - 1.7.3. Research on Cloud Storage Services
 - 1.7.4. Forensic Analysis Tools for Cloud
- 1.8. Investigation of Email Crimes
 - 1.8.1. Mailing Systems
 - 1.8.1.1. Mail Clients
 - 1.8.1.2. Mail Server
 - 1.8.1.3. SMTP Server
 - 1.8.1.4. POP3 Server
 - 1.8.1.5. IMAP4 Server
 - 1.8.2. Mailing Crimes
 - 1.8.3. Mail Message
 - 1.8.3.1. Standard Headers
 - 1.8.3.2. Extended Headers
 - 1.8.4. Steps for the Investigation of these Crimes
 - 1.8.5. Email Forensic Tools
- 1.9. Mobile Forensic Analysis
 - 1.9.1. Cellular Networks
 - 1.9.1.1. Types of Networks
 - 1.9.1.2. CDR Contents
 - 1.9.2. Subscriber Identity Module (SIM)
 - 1.9.3. Logical Acquisition
 - 1.9.4. Physical Acquisition
 - 1.9.5. File System Acquisition
- 1.10. Forensic Report Writing and Reporting
 - 1.10.1. Important Aspects of a Forensic Report
 - 1.10.2. Classification and Types of Reports
 - 1.10.3. Guide to Writing a Report
 - 1.10.4. Presentation of the Report
 - 1.10.4.1. Prior Preparation for Testifying
 - 1.10.4.2. Deposition
 - 1.10.4.3. Dealing with the Media



A highly interesting and totally up-to-date syllabus that will provide you with the best education in this field, enabling you to compete among the best in the sector"

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.



A close-up photograph of a person's hands typing on a laptop keyboard. The image is partially obscured by a teal diagonal graphic element that covers the top right and bottom right portions of the page. The lighting is soft, highlighting the texture of the skin and the keys.

“

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.



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

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.



06 Certificate

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



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

This **Postgraduate Certificate in Forensic Analysis in Cybersecurity** 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 diploma issued by **TECH Technological University** will reflect the qualification obtained through the **Postgraduate Certificate**, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Forensic Analysis in Cybersecurity**

Official N° of hours: **150 h.**



*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.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development language
virtual classroom



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Postgraduate Certificate

Forensic Analysis in Cybersecurity