Postgraduate Certificate

Secure Development in Cybersecurity

tech technological university

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Postgraduate Certificate
Secure Development in Cybersecurity

- 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/secure-development-cybersecurity

Index

01 Introduction p. 4

02 Objectives p. 8

03 Course Management p. 12

04 Structure and Content p. 16

05 Methodology p. 20

06 Certificate p. 28

01

Introduction

Developing code for applications is not only a job that requires the successful achievement of program objectives. In the context of cybersecurity, it is a process that needs an exhaustive, dynamic and completely up to date analysis in which the developer ensures the security of the code in any of the environments and phases in which it will intervene. This program has been created to provide the professional with the knowledge they need to achieve this with the support of the most up-to-date expertise in the industry.

This Postgraduate Certificate will teach you how to establish the necessary requirements for the correct operation of an application, in a safe way"

All developers face the challenge of making quality and secure application code, since in today's application ecosystem, any code or system vulnerability will lead to data loss, exposure and theft, as well as other problems caused by cyber-attacks.

It is the developer's obligation to be familiar with the different environments and phases through which their code will pass and to ensure that it works, in any of them, in the most efficient and secure way.

In addition, they have to know the needs and dependencies of their application to function and try to minimize the use of modules and functions, in order to reduce the attack surface. Understanding the methodologies and the type of tests to be performed will decrease, therefore, the time to resolve issues and verify the code.

A fully up-to-date Postgraduate Certificate that will allow you to grow as a professional in a field that requires specialists who are fully up to date in all aspects of this unit.

This **Postgraduate Certificate in Secure Development 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

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

Acquire the necessary information to create protection systems that guarantee the security of the programs and applications you work with at all times"

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

You will learn how to generate a clean, easily verifiable and quality code.

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.

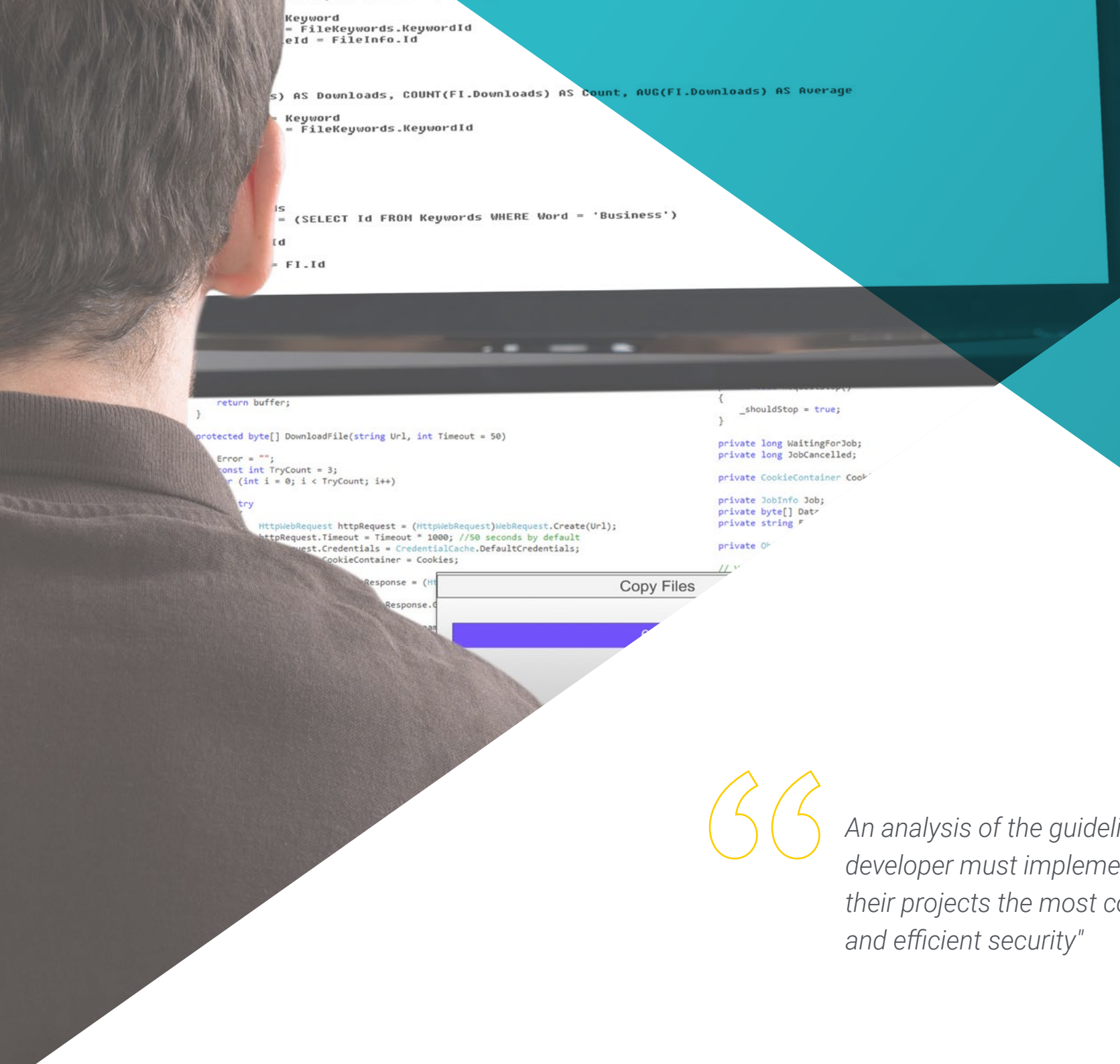
The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive specialization programmed to learn in real situations.

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.

02

Objectives

This exceptional Postgraduate Certificate in Secure Development in Cybersecurity delivers cybersecurity work capability both quickly and easily. With realistic and highly relevant objectives, this course of study is designed to progressively lead students to the acquisition of the theoretical and practical knowledge necessary to intervene with excellence and to develop transversal competencies that will allow them to face complex situations by developing appropriate and precise responses.



An analysis of the guidelines that the developer must implement to offer their projects the most comprehensive and efficient security"

General Objectives

- Determine the guidelines that a good developer must follow to comply with the necessary security requirements
- Establish an appropriate methodology for the developer and for the production environment
- Specify the tests to be performed on the developed software

Get on the road to your future career with the most interesting study support systems available today"

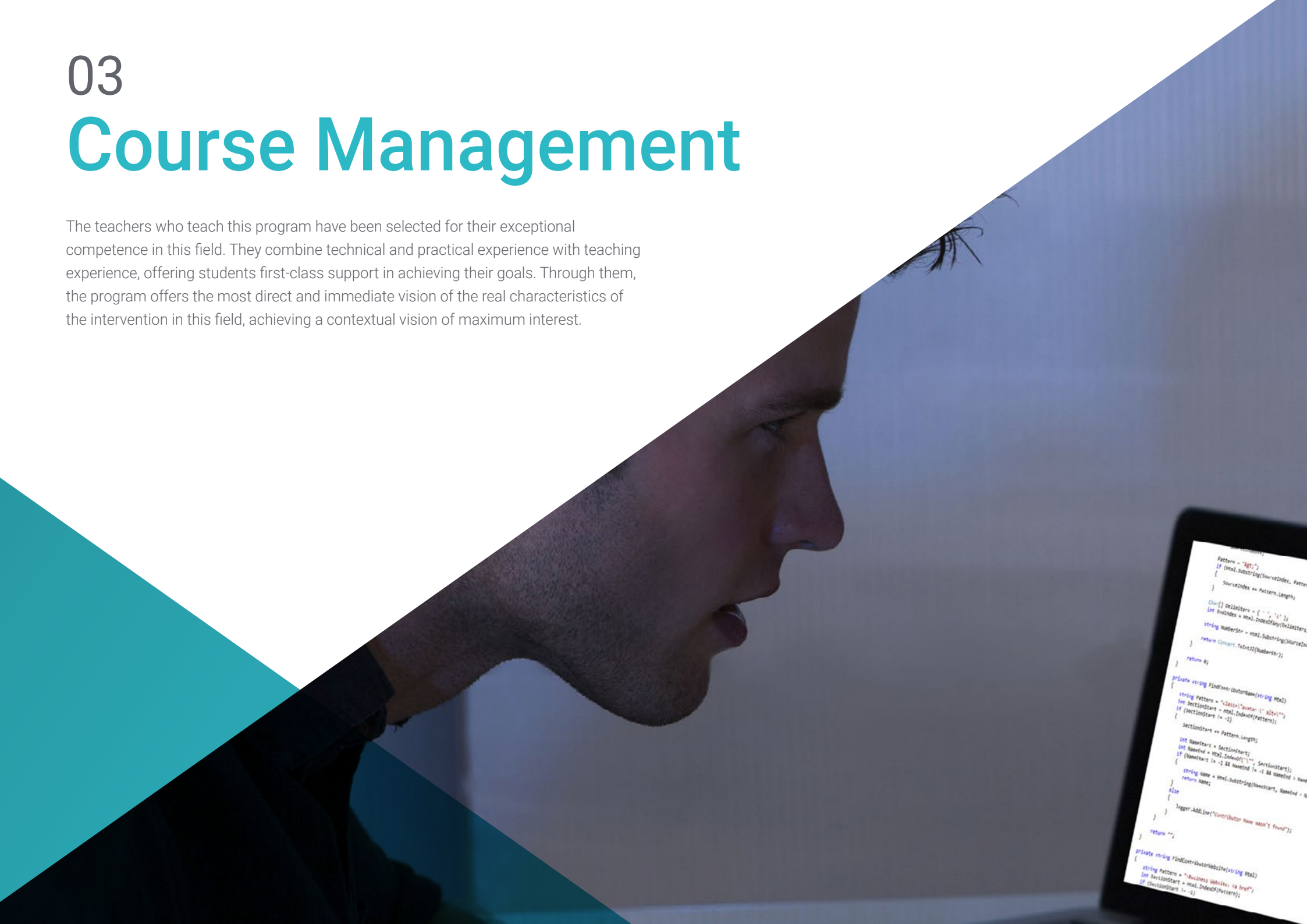
Specific Objectives

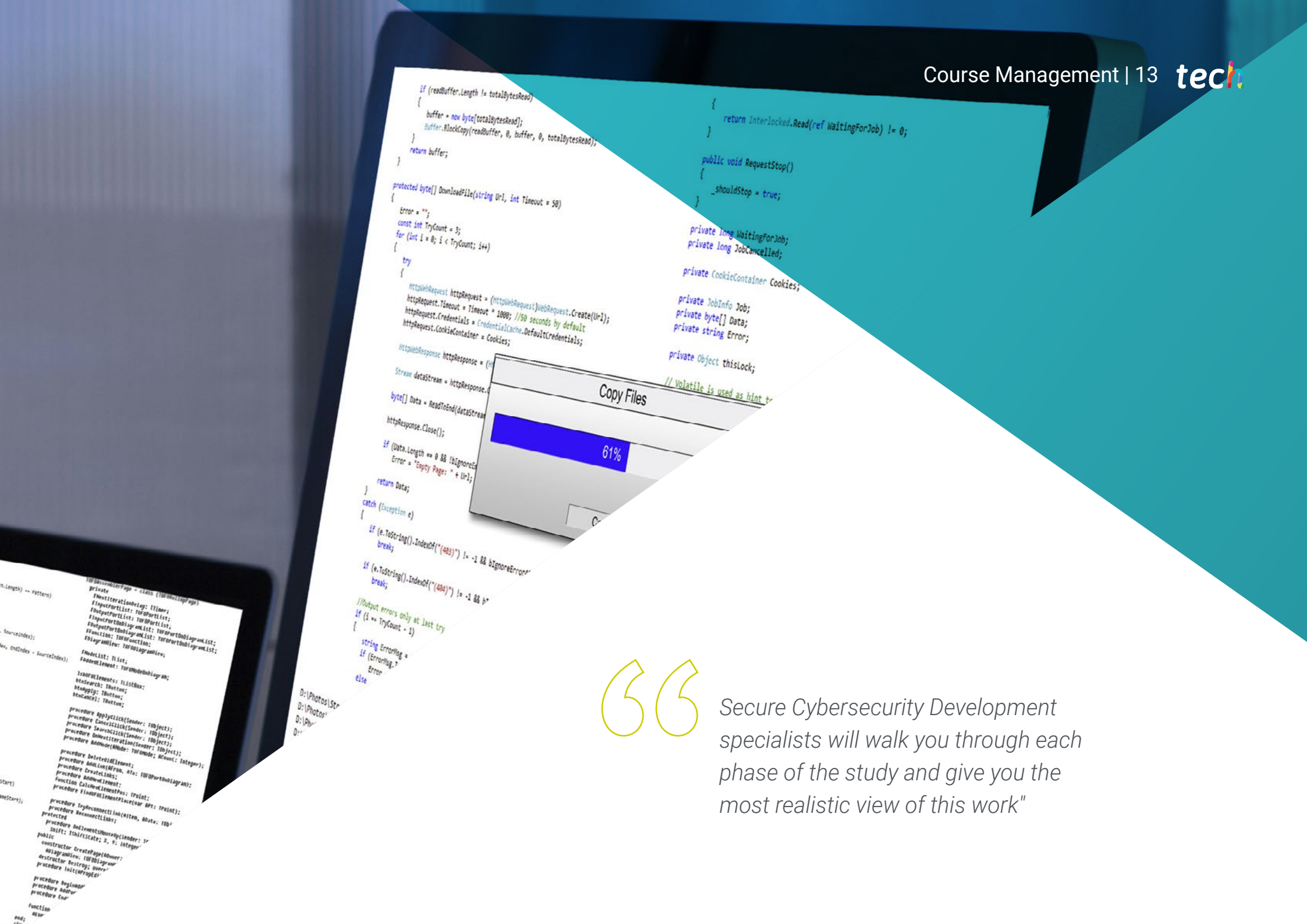
- Establish the necessary requirements for the correct operation of an application in a secure manner
- Examinelog files to understand error messages
- Analyze the different events and decide what to show to the user and what to save in the Logs
- Generate a sanitized, easily verifiable, and quality code
- Evaluate appropriate documentation for each phase of development
- Specify the behavior of the server to optimize the system
- Develop modular, reusable and maintainable code

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.





Secure Cybersecurity Development specialists will walk you through each phase of the study and give you the most realistic view of this work"

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

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

Management

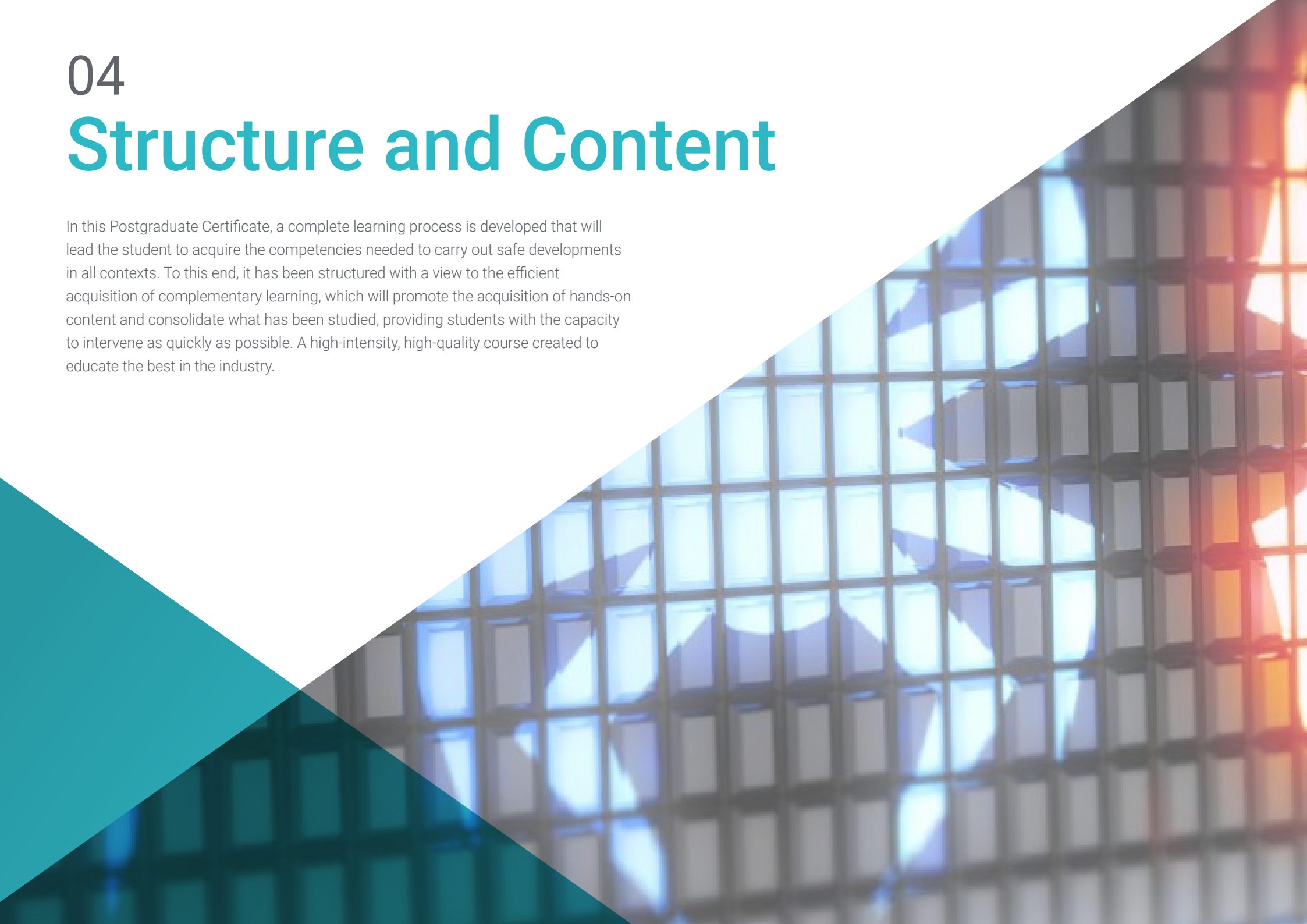
Ms. Fernández Sapena, Sonia

- 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 Techonologies. E-Council. Madrid

04

Structure and Content

In this Postgraduate Certificate, a complete learning process is developed that will lead the student to acquire the competencies needed to carry out safe developments in all contexts. To this end, it has been structured with a view to the efficient acquisition of complementary learning, which will promote the acquisition of hands-on content and consolidate what has been studied, providing students with the capacity to intervene as quickly as possible. A high-intensity, high-quality course created to educate the best in the industry.



All aspects that the developer must apply to ensure the cybersecurity of their codes, through a study approach focused on efficiency"

Module 1. Secure Development

1.1. Secure Development
- 1.1.1. Quality, Functionality and Safety
- 1.1.2. Confidentiality, Integrity and Availability
- 1.1.3. Software Development Life Cycle

1.2. Requirements Phase
- 1.2.1. Authentication Control
- 1.2.2. Role and Privilege Control
- 1.2.3. Risk-oriented Requirements
- 1.2.4. Privilege Approval

1.3. Analysis and Design Phases
- 1.3.1. Component Access and System Administration
- 1.3.2. Audit Trails
- 1.3.3. Session Management
- 1.3.4. Historical data
- 1.3.5. Proper Error Handling
- 1.3.6. Separation of Functions

1.4. Implementation and Coding Phase
- 1.4.1. Ensuring the Development Environment
- 1.4.2. Preparation of Technical Documentation
- 1.4.3. Secure Codification
- 1.4.4. Communications Security

1.5. Good Secure Coding Practices
- 1.5.1. Input Data Validation
- 1.5.2. Coding of Output Data
- 1.5.3. Programming Style
- 1.5.4. Change Log Management
- 1.5.5. Cryptographic Practices
- 1.5.6. Error and Log Management
- 1.5.7. File Management
- 1.5.8. Memory Management
- 1.5.9. Standardization and Reuse of Security Functions

1.6. Server Preparation and Hardening
- 1.6.1. Management of Users, Groups and Roles on the Server
- 1.6.2. Software Installation
- 1.6.3. Server Hardening
- 1.6.4. Robust Configuration of the Application Environment

1.7. DB Preparation and Hardening
- 1.7.1. DB Engine Optimization
- 1.7.2. Create Your Own User for the Application
- 1.7.3. Assigning the Required Privileges to the User
- 1.7.4. Hardening of the BBDD

1.8. Testing Phase
- 1.8.1. Quality Control in Security Controls
- 1.8.2. Phased Code Inspection
- 1.8.3. Checking Configuration Management
- 1.8.4. Black Box Testing

1.9. Preparing the Transition to Production
- 1.9.1. Perform Change Control
- 1.9.2. Carry out Production Changeover Procedure
- 1.9.3. Perform Rollback Procedure
- 1.9.4. Pre-production Testing

1.10. Maintenance Phase
- 1.10.1. Risk-Based Assurance
- 1.10.2. White Box Security Maintenance Testing
- 1.10.3. Black box Safety Maintenance Tests

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

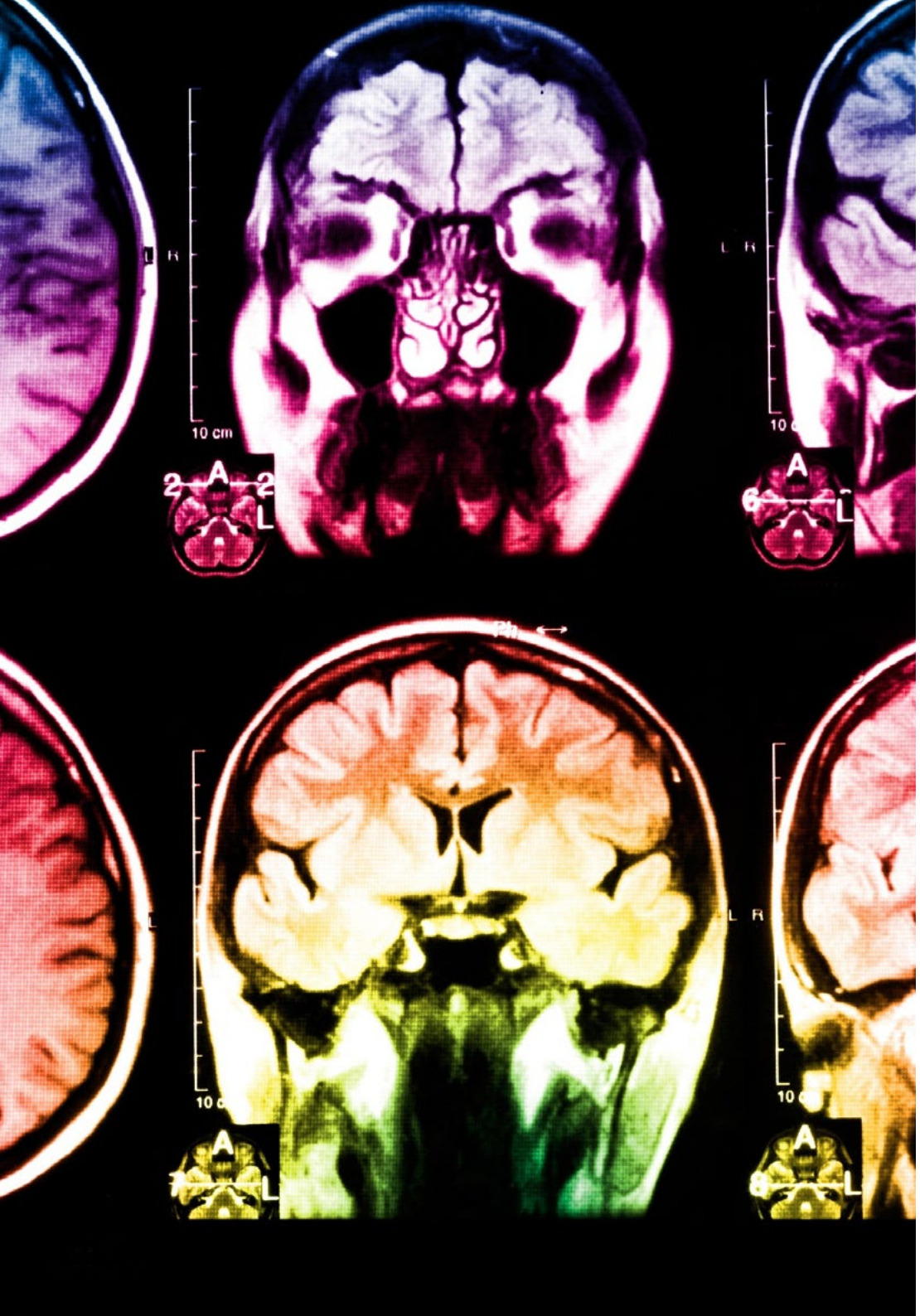
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.



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.

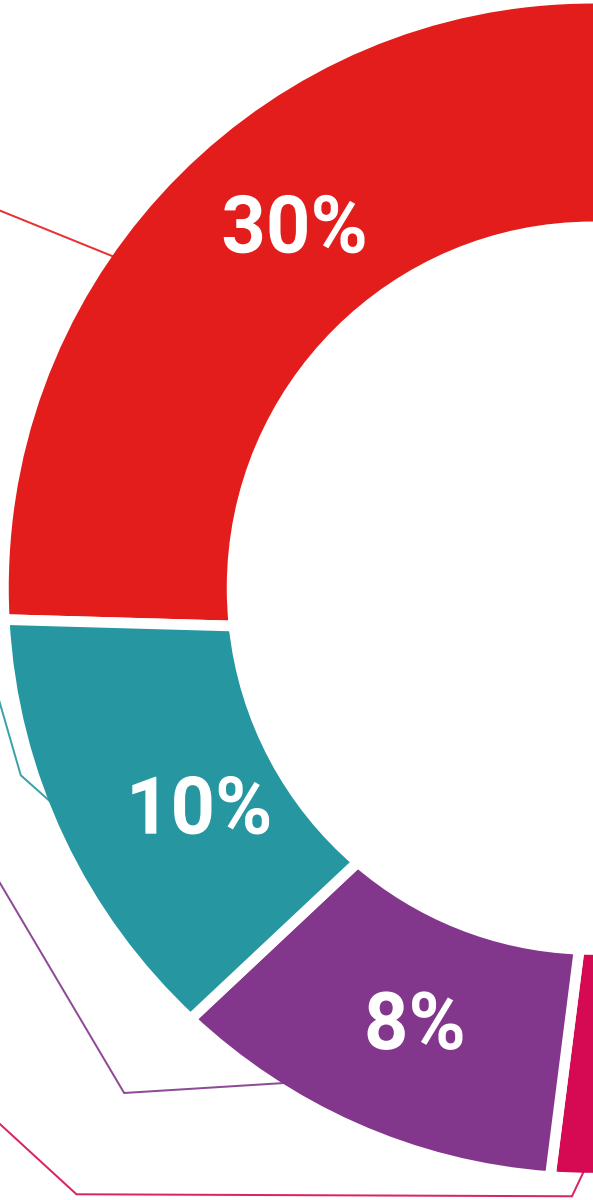
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

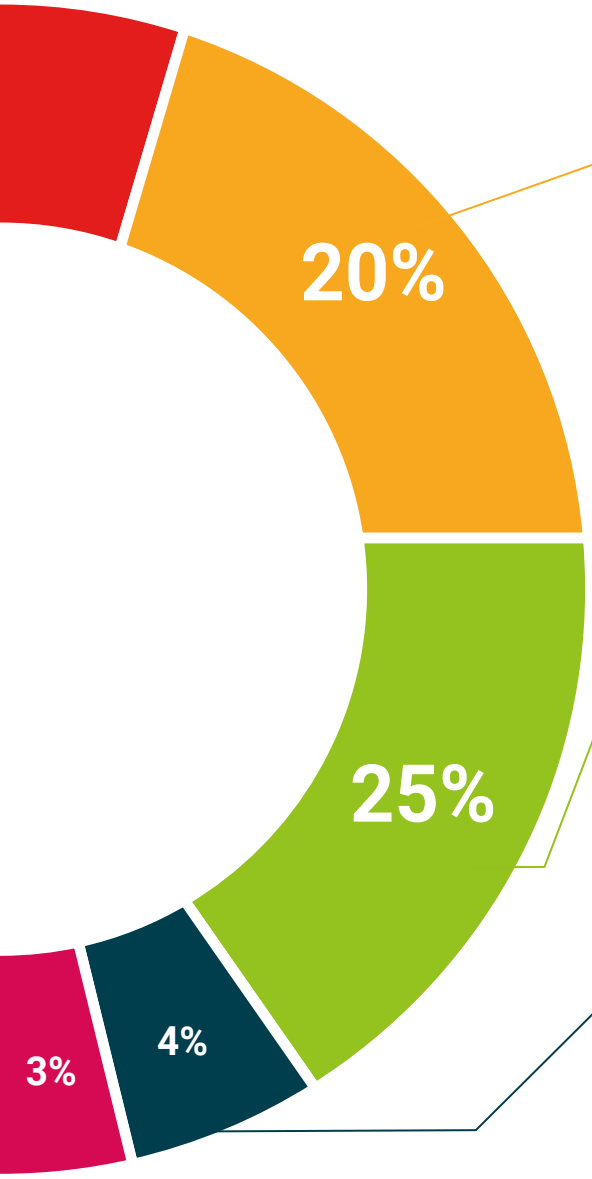
Practising Skills and Abilities

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

Title: **Postgraduate Certificate in Secure Development in Cybersecurity**

Official N° 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

Secure Development in Cybersecurity

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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Postgraduate Certificate
Secure Development in Cybersecurity

- Modality: **online**
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- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
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Postgraduate Certificate

Secure Development in Cybersecurity

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