Postgraduate Certificate

Network Architecture and Security

tech global university

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Postgraduate Certificate
Network Architecture and Security

- Modality: **online**
- Duration: **6 weeks**
- Certificate: **TECH Global University**
- Credits: **6 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/information-technology/postgraduate-certificate/network-architecture-security

Index

01

Introduction

Network Architecture and Security are essential for institutions for a number of critical reasons that impact their operation, security and continuity. For example, it facilitates the exchange of information or access to shared resources. This contributes to factors such as efficient collaboration. In this context, companies are increasingly aware of the benefits of having a cybersecurity specialist. These include Internet threat prevention and better positioning to compete in today's marketplace. In response to this, TECH launches an innovative program to detect intrusions and network segmentations. In addition, the program is based on a 100% online modality, thus guaranteeing the student's convenience.

You will develop the most effective VLANs in just 6 weeks. Enroll now!"

With cyber-attacks on the rise, computer experts need to keep abreast of their intrusion techniques. By knowing their most common activities, these professionals can anticipate threats and develop creative solutions to maintain security on the network. Therefore, they must update their knowledge on a regular basis and know how to use the latest technologies. They will then be able to implement both encryption systems and policies to prevent data loss and service interruption.

To achieve this, TECH develops a Postgraduate Certificate to acquire a deep understanding of network architecture and security. The program will delve into the concept of routing, so that students will be able to route network traffic efficiently. The curriculum will also provide tactics for perimeter protection through demilitarized zones. Thus, students will protect the critical assets of companies and reduce the attack surface on their networks. In this regard, security in wireless networks to prevent hackers will also be addressed. In addition, the program will implement information and security event management systems in the cloud. In this way, students will provide companies with services that adapt to their changing needs.

It should be noted that the Postgraduate Certificate in Network Architecture and Security uses the innovative Relearning system to strengthen the mastery of all these contents. TECH is a pioneer in the use of this teaching model, which promotes the assimilation of complex concepts through their natural and progressive reiteration. The program is also supported by materials in various formats such as explanatory videos, interactive summaries and infographics. All of this in a convenient 100% online modality that allows each person's schedule to be adjusted to their responsibilities, circumstances and availability.

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

- The development of case studies presented by experts in Network Architecture and Security
- The graphic, schematic and practical contents with which it is conceived provide cutting- Therapeutics and practical information on those disciplines that are essential for professional practice
- Practical exercises where the self-assessment process can be carried out 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

You will successfully implement frewalls and your networks will stand out as the most secure"

You will achieve your objectives thanks to TECH's didactic tools, including explanatory videos and interactive summaries"

Do you want to detect common attacks on wireless networks? Get it with this innovative specialization.

You will master EtherChannel technology and revolutionize the digital industry.

The program's teaching staff includes professionals from the field who contribute their work experience to this educational 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 education 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 during the academic year For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

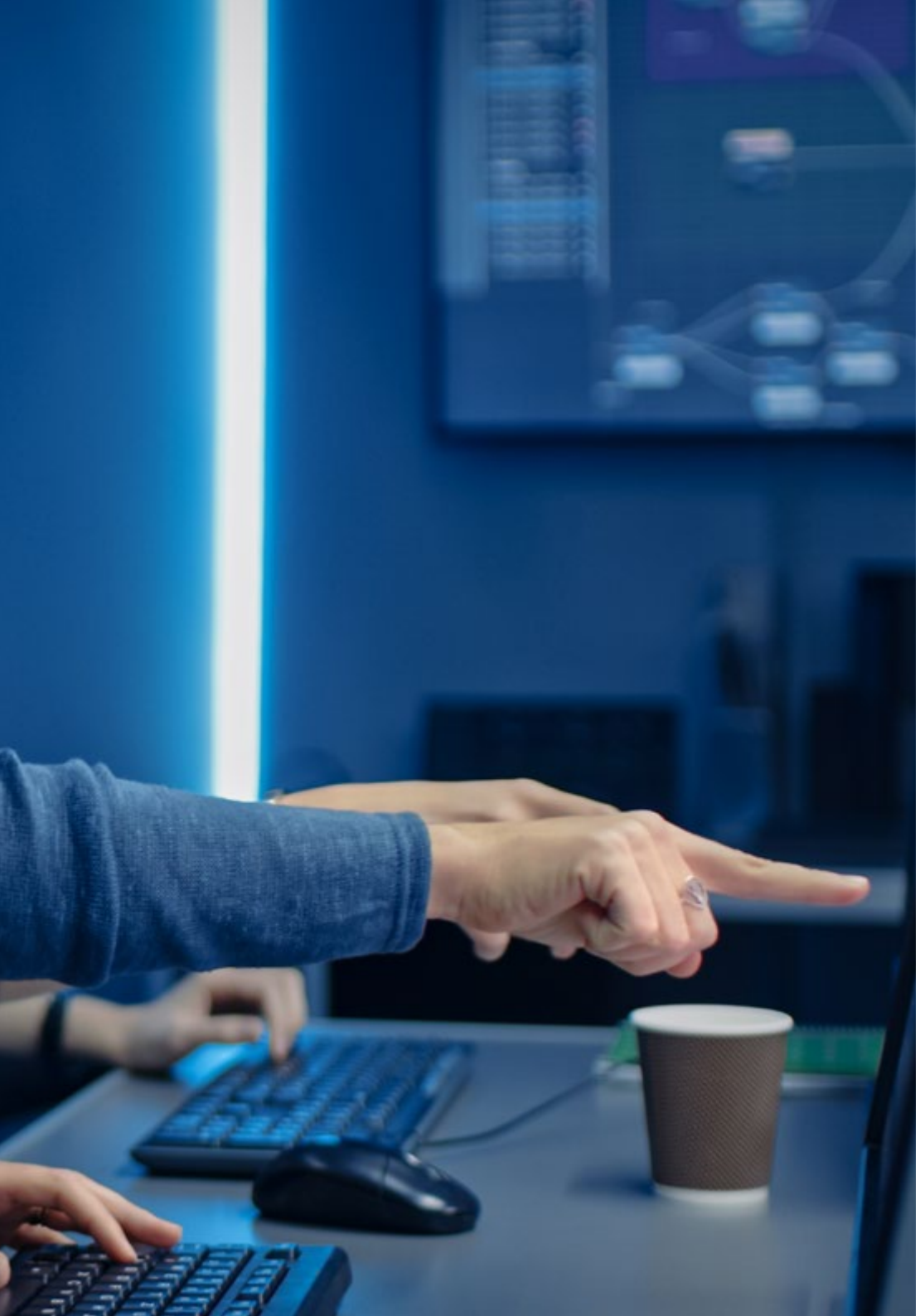
The design of this Postgraduate Certificate will allow students to acquire a comprehensive understanding of network architecture and security. To achieve this, the curriculum addresses different advanced strategies to minimize vulnerabilities in online environments. Through scenarios and simulations, students will be prepared to face cyber threats in business environments, thus contributing to the protection of network infrastructures.

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

General Objectives

- Acquire advanced skills in penetration testing and Red Team simulations, addressing the identification and exploitation of vulnerabilities in systems and networks
- Develop leadership skills to coordinate teams specialized in offensive cybersecurity, optimizing the execution of Pentesting and Red Team projects
- Develop skills in the analysis and development of malware, understanding its functionality and applying defensive and educational strategies
- Refine communication skills by preparing detailed technical and executive reports, presenting findings effectively to technical and executive audiences
- Promote an ethical and responsible practice in the field of cybersecurity, considering ethical and legal principles in all activities
- Keep students up-to-date with emerging trends and technologies in cybersecurity

You acquire knowledge without geographical limitations or pre-established timing"



Specific Objectives

- Acquire advanced knowledge of network architecture, including topologies, protocols and key components
- Develop skills to identify and assess specific vulnerabilities in network infrastructures, considering potential threats
- Learn how to implement effective network security measures, including firewalls, intrusion detection systems (IDS) and network segmentation
- Familiarize the student with emerging networking technologies, such as software-defined networking (SDN), and understand their impact on security
- Develop skills to secure network communications, including protection against threats such as sniffing and man-in-the-middle attacks
- Learn how to evaluate and improve security configurations in enterprise network environments, ensuring adequate protection
- Develop skills to implement effective mitigation measures against threats in enterprise networks, from internal attacks to external threats
- Foster effective collaboration with security teams, integrating strategies and efforts to protect network infrastructure
- Promote ethical and legal practices in the implementation of network security measures, ensuring adherence to ethical principles in all activities

03

Course Management

True to its commitment to provide the highest quality education, TECH has a first class teaching staff. These professionals have a broad professional background, having worked in prestigious institutions. In addition, they have in-depth knowledge of cybersecurity and possess the most advanced tactics for detecting network intrusions. In this way, students have the guarantees they need to specialize at an international level in a digital sector that offers numerous job opportunities.

Explore the details of IGP protocols with the support of the best faculty"

Management

Mr. Carlos Gómez Pintado

- Manager of Cybersecurity and Network Team Cipherbit in Oesía Group
- Manager Advisor & Investor at Wesson App
- Graduate in Software Engineering and Information Society Technologies, Universidad Politécnica de Madrid
- Collaboration with educational institutions for the development of Higher Level Training Cycles in cybersecurity

Professors

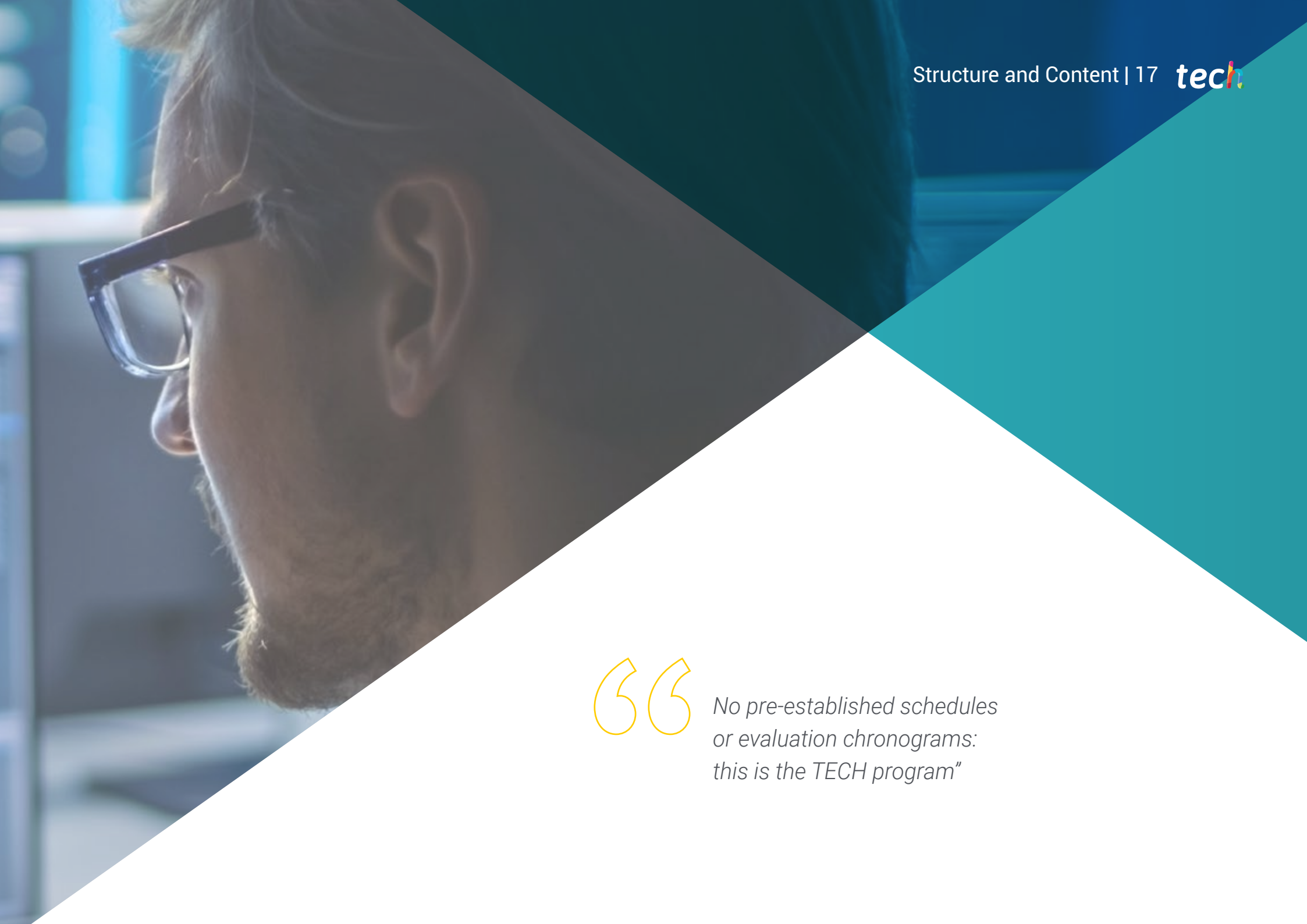
Mr. Marcelino Siles Rubia

- Cibersecurity Engineer
- Cybersecurity Engineering at the Rey Juan Carlos University
- Knowledge: Competitive Programming, Web Hacking, Active Directory, and Malware Development
- AdaByron Contest Winner

04

Structure and Content

This program will explore the principles of network design, identifying common vulnerabilities and weaknesses. Students will go into switching to redirect traffic according to predefined security rules. In addition, this curriculum will analyze emerging technologies such as software-defined networking (SDN) and its impact on security. Emphasis is also placed on the usefulness of routing protocols (including OSPF) for information recovery in the event of failures. Students will apply specific techniques to assess network architecture security and will be prepared to overcome cyber threats.



No pre-established schedules or evaluation chronograms: this is the TECH program"

Module 1. Network Architecture and Security

1.1. Computer Networks
- 1.1.1. Basic Concepts: Protocols,LAN,WAN,CP,CC
- 1.1.2. OSI and TCP/IP Model
- 1.1.3. Switching Basic Concepts
- 1.1.4. Routing Basic concepts Sub-Section 1

1.2. Switching
- 1.2.1. Intro to VLAN' s
- 1.2.2. STP
- 1.2.3. EtherChannel
- 1.2.4. Layer 2 Attacks

1.3. VLAN´s
- 1.3.1. Importance of VLAN's
- 1.3.2. Vulnerabilities in VLAN's
- 1.3.3. Common Attacks on VLAN's
- 1.3.4. Mitigations

1.4. Routing
- 1.4.1. IP Addressing - IPv4 and IPv6
- 1.4.2. Routing - Key Concepts
- 1.4.3. Static Routing
- 1.4.4. Dynamic Routing: Introduction

1.5. IGP Protocols
- 1.5.1. RIP
- 1.5.2. OSPF
- 1.5.3. RIP vs OSPF
- 1.5.4. Topology Needs Analysis

1.6. Perimeter Protection
- 1.6.1. DMZs
- 1.6.2. Firewalls
- 1.6.3. Common Architectures
- 1.6.4. Zero Trust Network Access

1.7. IDS and IPS
- 1.7.1. Features
- 1.7.2. Implementation
- 1.7.3. SIEM and SIEM CLOUDS
- 1.7.4. Detection based on HoneyPots

1.8. TLS and VPN´s
- 1.8.1. SSL/TLS
- 1.8.2. Common Attacks
- 1.8.3. VPNs with TLS
- 1.8.4. VPNs with IPSEC

1.9. Security in Wireless Networks
- 1.9.1. Introduction to Wireless Networks
- 1.9.2. Protocols
- 1.9.3. Key Elements
- 1.9.4. Common Attacks

1.10. Business Networks and How to Deal with Them
- 1.10.1. Logical Segmentation
- 1.10.2. Physical Segmentation
- 1.10.3. Access Control
- 1.10.4. Other Measures to Take into Account

Library full of multimedia resources in different audiovisual formats"

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

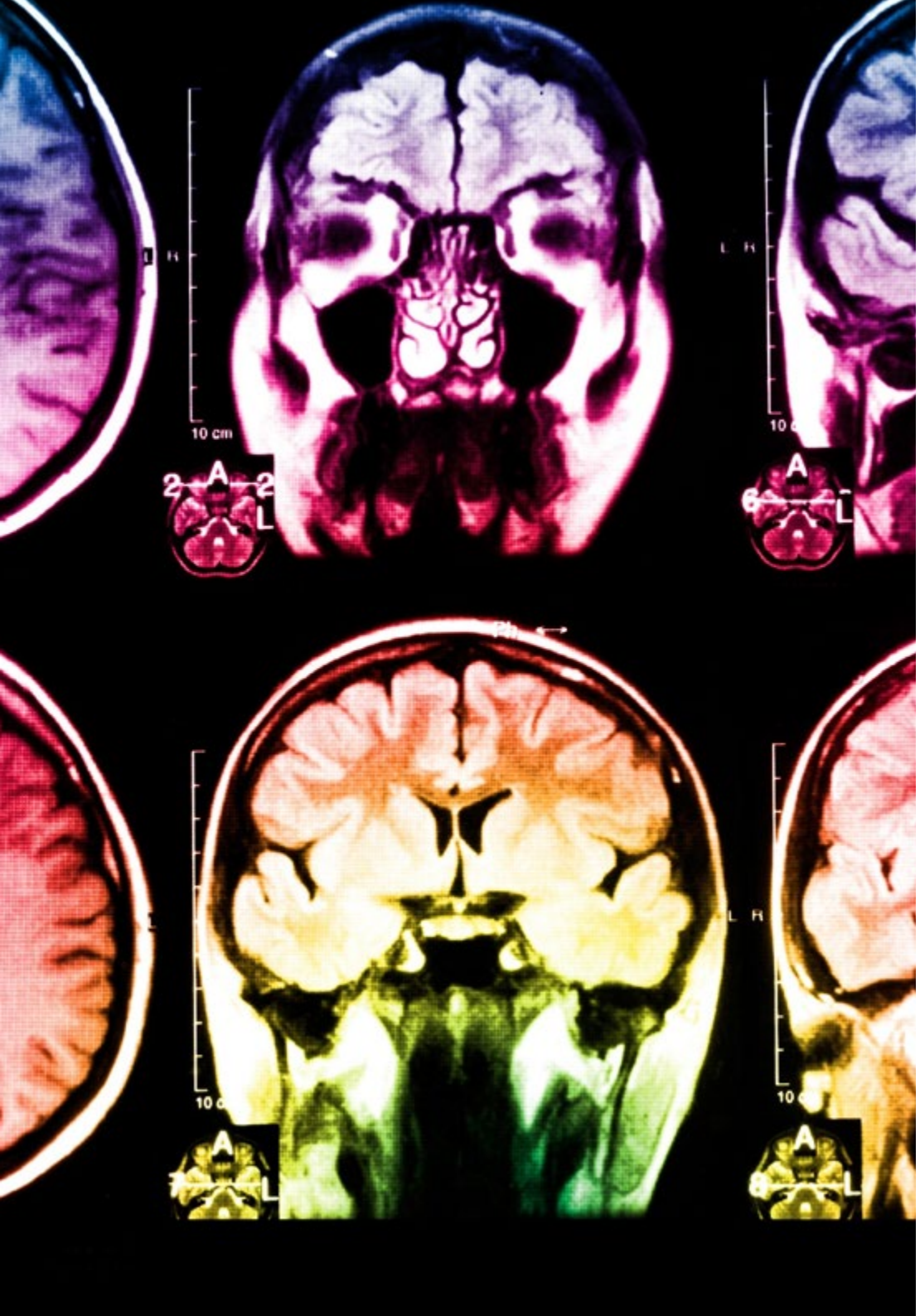
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

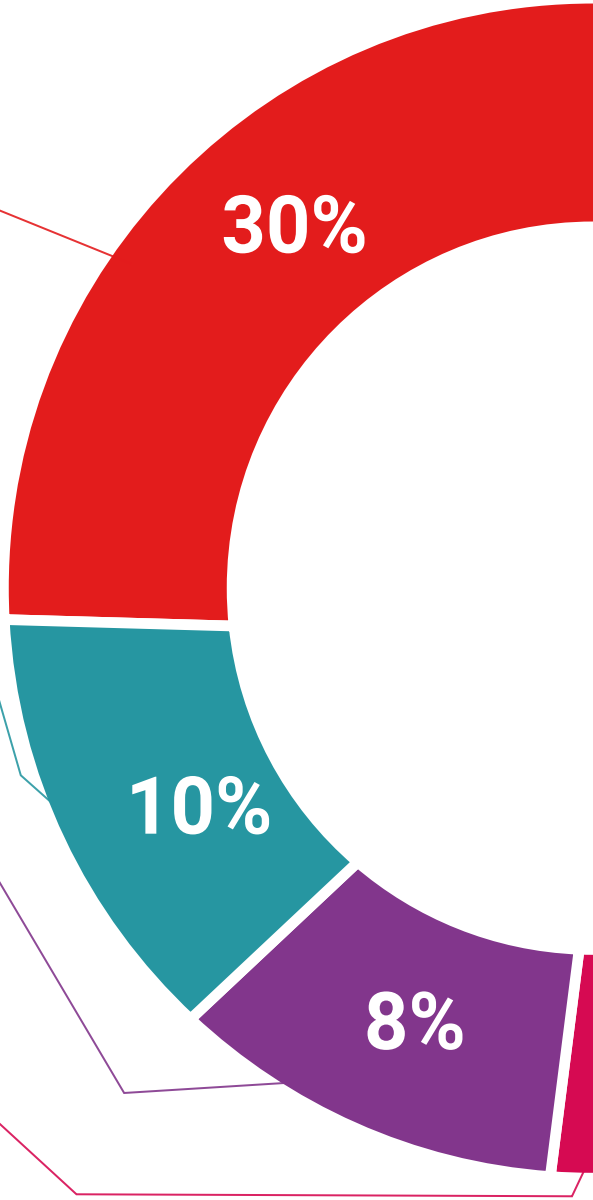
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

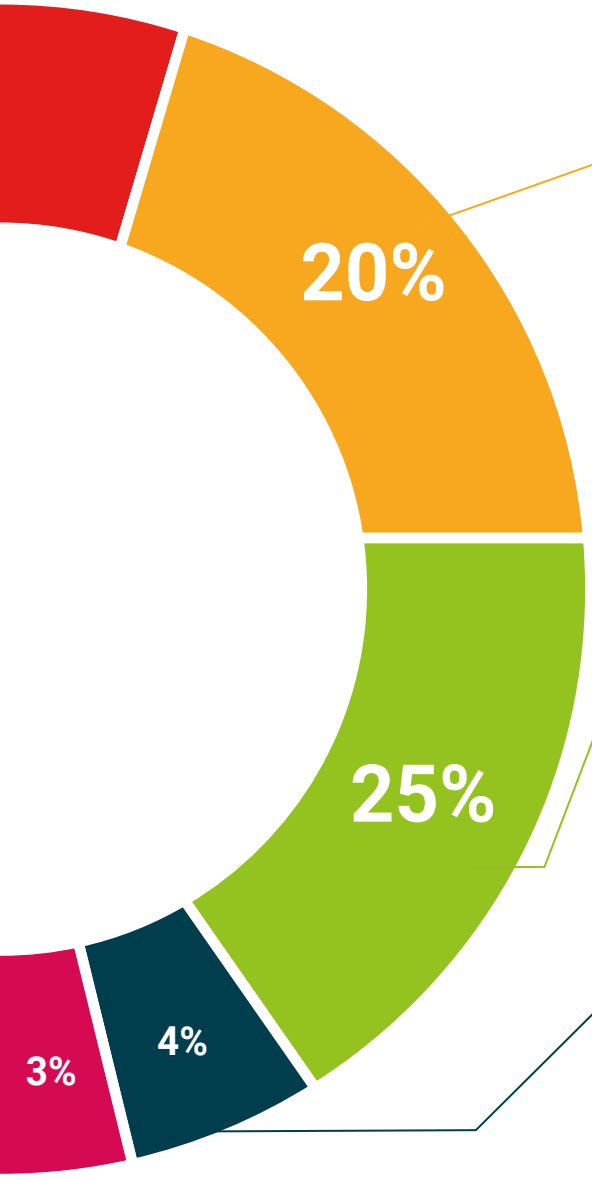
Practising Skills and Abilities

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

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

This program will allow you to obtain your **Postgraduate Certificate in Network Architecture and Security** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Network Architecture and Security**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Certificate in Network Architecture and Security

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

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 Global University will make the necessary arrangements to obtain it, at an additional cost.

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