Postgraduate Diploma

Security in Cloud Infrastructures

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Postgraduate Diploma
Security in Cloud Infrastructures

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

Website: www.techtitute.com/pk/information-technology/postgraduate-diploma/postgraduate-diploma-security-cloud-infrastructures

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01

Introduction

Compared to traditional structures, Cloud Infrastructures represent a great advance in terms of dealing with internal and external threats, but in order to optimize security processes, challenges arise that only the most qualified professionals can face. This is the reason why TECH has designed a program that seeks to develop the knowledge and skills of students, necessary to effectively integrate security and efficiently protect the applications and services of companies in cloud environments. Thus, it offers a program that deals in depth with topics such as Cybersecurity, NetOps Benefits or Monitoring and Backup, among others. All this in a convenient 100% online mode and thanks to the most updated content.

Deepen your knowledge in Cloud Infrastructures and become an expert in Security, with no time limits or need to travel"

Security services in Cloud environments, such as firewalls, SIEMS and protection against threats, to protect applications and services of companies, are a vital and booming sector. So that professionals in this field, who know how to supervise and optimize this security using different monitoring and auditing tools, are increasingly required and demanded by companies in all areas.

For this reason, TECH has designed a Postgraduate Diploma in Security in Cloud Infrastructures, to develop the specialized knowledge of students on the specific risks and threats of cloud environments, required to apply the necessary solutions and efficiently. Therefore, it offers a complete syllabus that covers topics such as Threat Modeling, Cybersecurity Tools, Networking, Network Monitoring and Auditing or types of backup services, among others.

In this way, the student will be able to enjoy a convenient 100% online mode, without the need to dedicate excessive time to the syllabus, without time constraints or travel. All this, with a dynamic multimedia content, the most updated information and the most innovative teaching tools. In addition to the possibility of accessing all the content from the beginning and with any device that has an internet connection.

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

- The development of practical cases presented by experts in Security in Cloud Infrastructure
- The graphic, schematic, and practical contents with which they are created, provide 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
- 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

Stand out as a professional in one of the sectors with the highest growth potential in the field of Cloud Infrastructures"

Acquire new skills in the field of Cloud Network Security and put them to the test with a wide variety of practical activities available on the Virtual Campus"

Enroll now and become an expert in Cybersecurity Tools at Code level.

Know in depth the Strategies and Management of backups in Cloud environments.

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its 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 education programmed to learn in real situations.

The design of this program 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 student will be assisted by an innovative interactive video system created by renowned experts.

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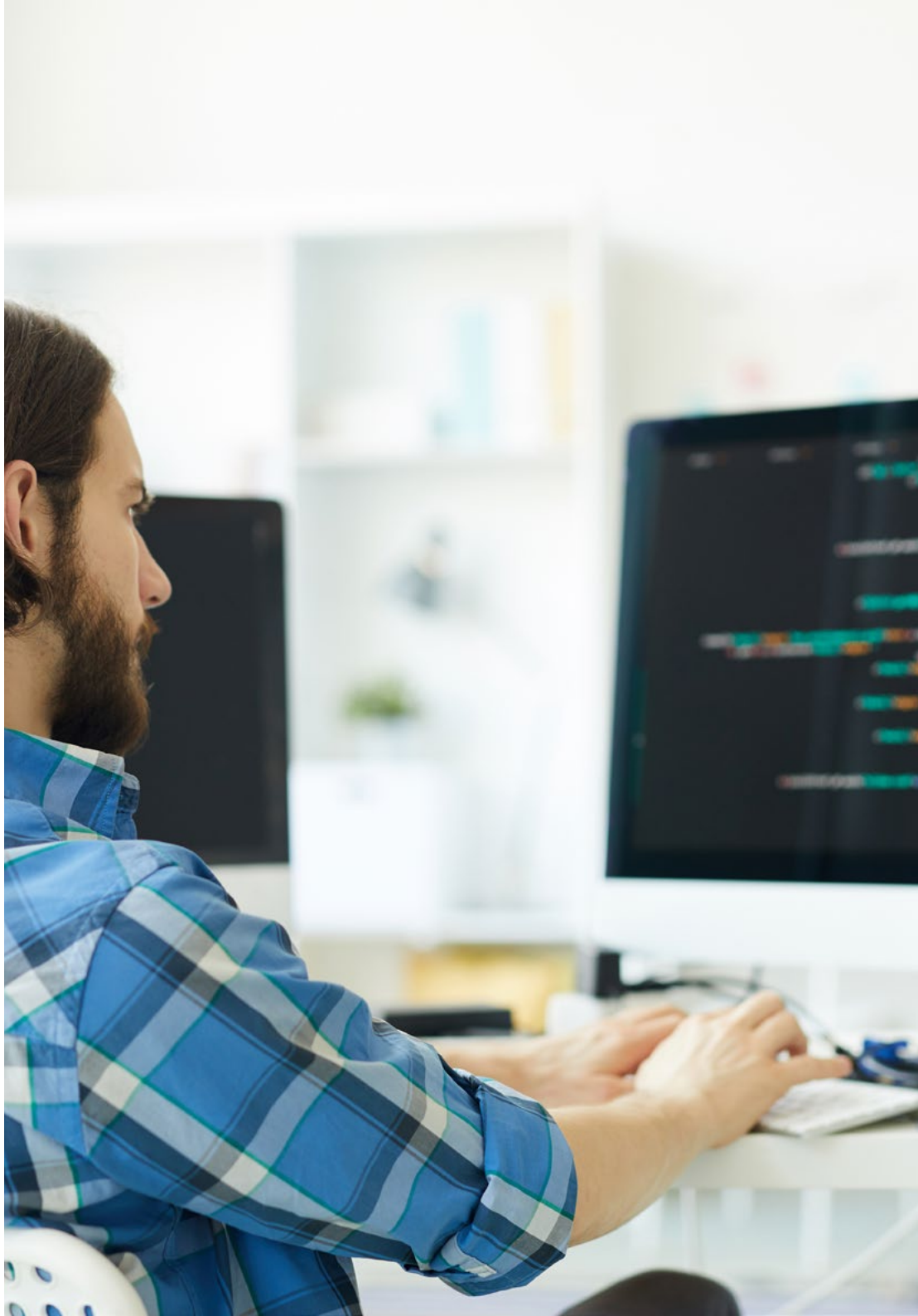
Objectives

The objective of this Postgraduate Diploma in Security in Cloud Infrastructures is to develop the knowledge and skills that students need to integrate security into processes and protect infrastructures, communications, applications and services in cloud environments, efficiently. All this, thanks to the most updated and dynamic theoretical and practical content of the academic market.

Develops the knowledge and skills needed to protect enterprise cloud infrastructures with the most efficient security strategies"

General Objectives

- Develop specialized knowledge about what infrastructures are and what motivations exist for their transformation to the cloud
- Acquire the skills and knowledge necessary to implement and manage IaaS solutions effectively
- Acquire specialized knowledge to add or remove storage and processing capacity quickly and easily, enabling you to adapt to fluctuations in demand
- Examine the scope of *Network DevOps*, demonstrating that it is an innovative approach for network management in IT environments
- Understand the challenges faced by an enterprise in Cloud governance and how to address them
- Use security services in Cloud environments such , as Firewalls, SIEMS and threat protection , to secure applications and services
- Establish best practices in the use of Cloud Services and the main recommendations when using them
- Increase user efficiency and productivity: by enabling users to access their applications and data from anywhere and on any electronic device, VDI can improve user efficiency and productivity
- Gain specialized knowledge about Infrastructure as Code
- Identify key points to demonstrate the importance of investing in backup and monitoring in organizations



Specific Objectives

Module 1. Network DevOps and Network Architectures in Cloud infrastructures

- Develop the concepts and principles of Network DevOps and its application in Cloud environments
- Determine the requirements needed to implement Network DevOps in Cloud environments
- Use the relevant tools and software for Network DevOps
- Establish how to implement and manage internal network services in cloud environments, such as VPC and subnetting
- Compile the boundary network services available in Cloud environments and how they are used to connect Cloud and on-premise networks
- Substantiate the importance of DNS usage in Cloud environments and how to implement hybrid and multi-tenant network connectivity
- Implement and manage content delivery services in cloud environments, such as CDNs and WAFs
- Examine the important aspects of security in Cloud networks and how security measures can be implemented in these environments
- Monitor and perform network audits in Cloud environments to ensure availability and security

Module 2. Cybersecurity in Cloud Infrastructures

- Develop specialized knowledge about specific risks and threats in Cloud environments
- Analyze security frameworks and apply them to protect the infrastructure
- Design threat models and protect applications and services against threats
- Evaluate code-level cybersecurity tools and how to use them to detect and prevent vulnerabilities in applications and services
- Perform integration of cybersecurity controls into processes
- Master ZAP Proxy to audit Cloud environments
- Examine the different types of Firewalls and configure them to protect infrastructure and services
- Apply transport layer security using SSL/TLS and certificates
- Evaluate SIEMs and use to monitor and optimize the security of the Cloud environment

Module 3. Monitoring and Backup of Cloud Infrastructures

- Determine how to establish a backup strategy and a monitoring strategy
- Establish the most demanded services and usage of each one of them
- Identify the types of backup and its uses
- Determine a robust backup strategy that meets business objectives
- Develop a business continuity plan
- Identify the types of monitoring and the purpose of each one
- Generate a proactive attitude towards incidents by establishing a scalable monitoring strategy
- Apply the different strategies on real use cases
- Identify improvement points in order to evolve the environments as the business evolves

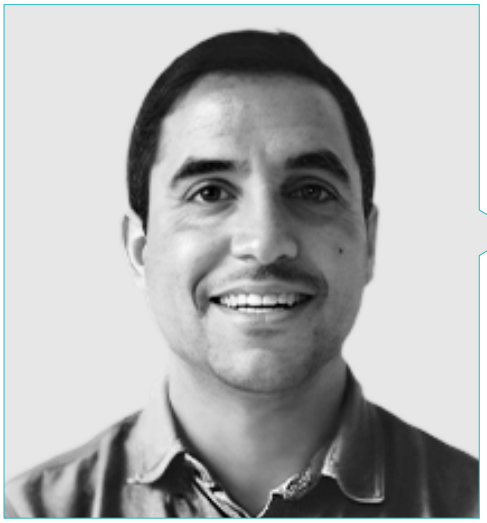
03

Course Management

With the aim of offering a quality education that provides students with the skills and competencies necessary to face their future in the field of Cloud Infrastructures with total guarantee of success, TECH has an excellent team of experts. This group of professionals specialized in the field has designed the program based on their knowledge and professional background, in order to transmit the most complete and updated information possible.

Achieve your most demanding goals, with the support of an outstanding team of experts in Security in Cloud Infrastructures"

Management



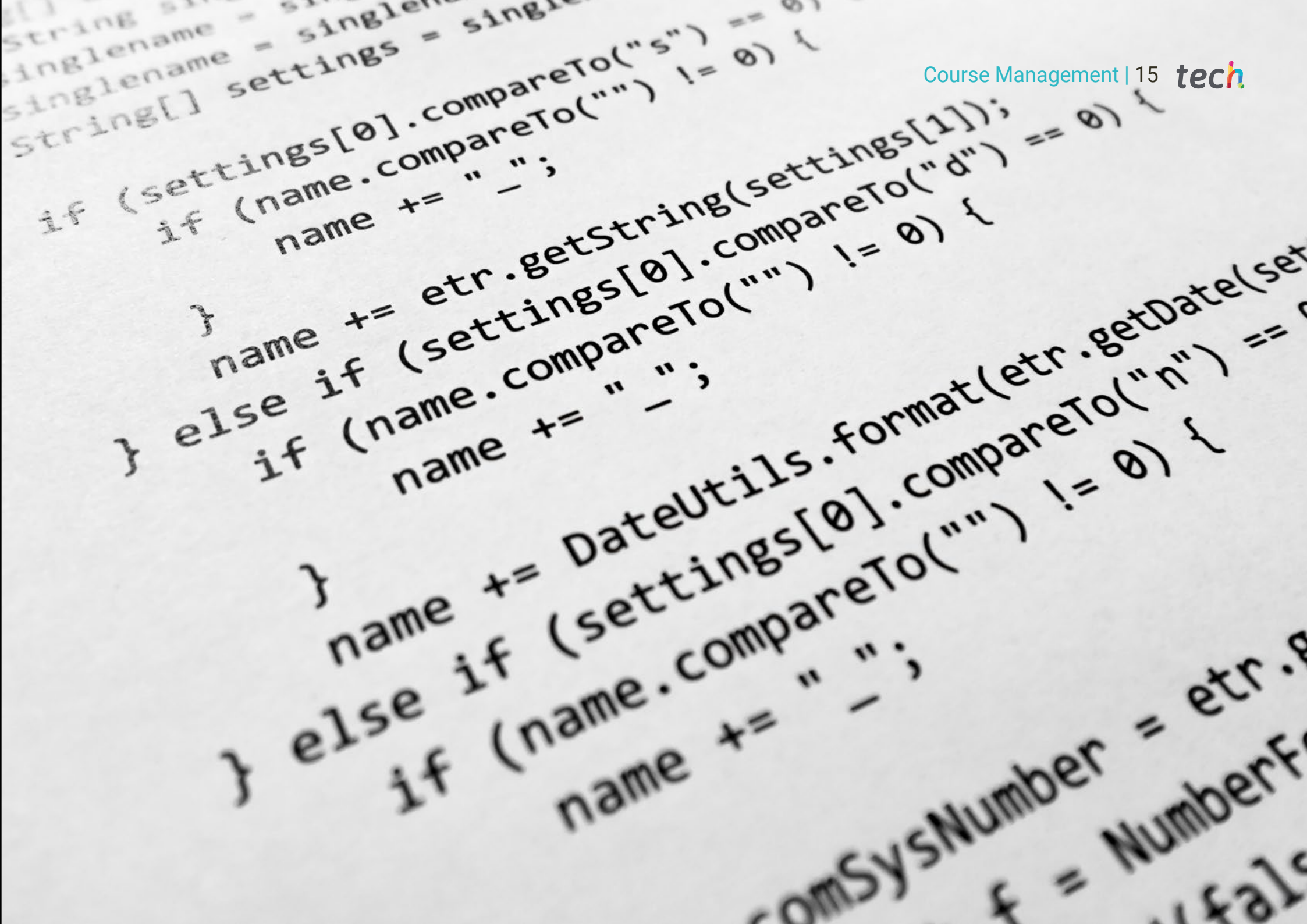
Mr. Casado Sarmentero, Iván

- Head of DevOps at TRAK
- IT Director at Madison Experience Marketing
- Infrastructure and Telecommunications Officer at Madison Experience Marketing
- Operations and Support Officer at Madison Experience Marketing
- IT Systems Administrator at Madison Experience Marketing
- Master in Leadership and Team Management in the Chamber of Commerce of Valladolid
- Higher Level Educational Cycle in Computer Applications Development at IES Galileo

Professors

Mr. Fuente Alonso, Rubén

- Responsible for Security Operations Center at Madison Experience Marketing
- Founding Partner and President of the Asociación Informática Palencia Kernel Panic
- Network and Systems Security Administrator at Entelgy Innotec Security
- Network and Systems Security Administrator at Entelgy Innotec Security
- PartyLans Network Administrator in several associations
- Higher University Course on Cybersecurity at Rey Juan Carlos University
- CCNA R&S and CCNA Security at Cisco Networking Academy
- TCP/IP Network Design at IBM
- Senior Technician in Computer Systems Administration at CIFP Palencia


String[] settings = singlename = singlename
if (settings[0].compareTo("s") == 0)
if (name.compareTo("") != 0) {
name += " ";
}
name += etr.getString(settings[1]);
} else if (settings[0].compareTo("d") == 0) {
if (name.compareTo("") != 0) {
name += " ";
}
name += DateUtils.format(etr.getDate(set
} else if (settings[0].compareTo("n") ==
if (name.compareTo("") != 0) {
name += " ";
comSysNumber = etr.g
f = NumberF

04

Structure and Content

The syllabus and additional materials that make up this program have been designed by TECH's team of renowned experts in the field. To the theoretical content, they have added practical activities and the most innovative tools, to create a degree with the most updated and complete information in the academic market. All this, based on the principles and fundamentals of the pedagogical methodology of Relearning, which facilitates the optimal assimilation of content by students.

A complete, dynamic and innovative content, which has been designed by renowned experts in Cloud Infrastructures"

Module 1. Network DevOps and Network Architectures in Cloud infrastructures

1.1. Nerwork DevOps (NetOps)
- 1.1.1. Nerwork DevOps (NetOps)
- 1.1.2. NetOps Methology
- 1.1.3. NetOps Benefits

1.2. Network DevOps Fundamentals
- 1.2.1. Networking Fundamentals
- 1.2.2. OSI TCP/IP model, CIDR and Subnetting
- 1.2.3. Main Protocols
- 1.2.4. HTTP responses

1.3. Tools and software for Network DevOps
- 1.3.1. Network layer tools
- 1.3.2. Application layer tools
- 1.3.3. DNS Tools

1.4. Networking in Cloud Environments: Internal network services
- 1.4.1. Virtual Networks
- 1.4.2. Subnetworks
- 1.4.3. Routing tables
- 1.4.4. Availability zones

1.5. Networking in Cloud Environments: Borders network services
- 1.5.1. Internet Gateway
- 1.5.2. NAT Gateway
- 1.5.3. Load Balancing

1.6. Networking in Cloud Environments: DNS
- 1.6.1. DNS Fundamentals
- 1.6.2. Cloud DNS Services
- 1.6.3. HA / LB via DNS

1.7. Hybrid / Multitenant Network Connectivity
- 1.7.1. Site to Site VPN
- 1.7.2. VPC Peering
- 1.7.3. Transit Gateway / VPC Peering

1.8. Content Delivery Network Services
- 1.8.1. Content Delivery Services
- 1.8.2. AWS CLoudFront
- 1.8.3. Other CDNs

1.9. Security in Cloud Networks
- 1.9.1. Security Principles in Networks
- 1.9.2. Layer 3 and 4 protection
- 1.9.3. Layer 7 protection

1.10. Network Monitoring and Auditing
- 1.10.1. Monitoring and auditing
- 1.10.2. Flow Logs
- 1.10.3. Monitoring services: CloudWatch

Module 2. Cybersecurity in Cloud Infrastructures

2.1. Risk in Cloud Environments
- 2.1.1. Cybersecurity strategies
- 2.1.2. Risk-Based Approach
- 2.1.3. Risk categorization in Cloud environments

2.2. Security Frameworks in Cloud Environments
- 2.2.1. Cybersecurity Frameworks and Standards
- 2.2.2. Technical cybersecurity frameworks
- 2.2.3. Organization cybersecurity frameworks

2.3. Threat Modeling in Cloud Environments
- 2.3.1. Threat modeling process
- 2.3.2. Threat modeling phases
- 2.3.3. STRIDE

2.4. Cybersecurity tools at the code level
- 2.4.1. Classification of tools
- 2.4.2. Integrations:
- 2.4.3. Examples of use

2.5. Integrations of cybersecurity controls in cloud environments
- 2.5.1. Process security
- 2.5.2. Security controls in the different phases
- 2.5.3. Examples of integrations

2.6. ZAP Proxy Tool
- 2.6.1. ZAP Proxy
- 2.6.2. ZAP Proxy Features
- 2.6.3. ZAP Proxy Automation

2.7. Automated Vulnerability Scanning in Cloud Environments
- 2.7.1. Persistent and automated vulnerability scanning
- 2.7.2. OpenVAS
- 2.7.3. Vulnerability Scanning in Cloud Environments

2.8. Firewalls in Cloud Environments
- 2.8.1. Types of Firewalls
- 2.8.2. Importance of Firewalls
- 2.8.3. OnPremise firewalls and Cloud firewalls

2.9. Transport Layer Security in Cloud Environments
- 2.9.1. SSL/TLS and Certificates
- 2.9.2. SSL Audits
- 2.9.3. Certificate Automation

2.10. SIEM in Cloud Environments
- 2.10.1. SIEM as a Security Core
- 2.10.2. Cyberintelligence
- 2.10.3. Examples of SIEM Systems

Module 3. Monitoring and Backup of Cloud Infrastructures

3.1. Monitoring and Backup of Cloud Infrastructures
- 3.1.1. Benefits of Backup in Clouds
- 3.1.2. Backup Types
- 3.1.3. Benefits of cloud monitoring
- 3.1.4. Types of Monitoring

3.2. Availability and Security of systems in Cloud Infrastructures
- 3.2.1. Main Factors
- 3.2.2. Most demanded uses and services
- 3.2.3. Evolution

3.3. Types of backup services in Cloud Infrastructures
- 3.3.1. Full backup
- 3.3.2. Incremental backup
- 3.3.3. Differential Backup
- 3.3.4. Other Types of Backup

3.4. Strategy, planning and management of backups in Cloud Infrastructures
- 3.4.1. Establishing objectives and scope
- 3.4.2. Types of backups
- 3.4.3. Good Practices

3.5. Cloud infrastructure continuity plan
- 3.5.1. Strategy Continuity Plan
- 3.5.2. Types of Plans
- 3.5.3. . Creating a Continuity Plan

3.6. Types of Monitoring services in Cloud Infrastructures
- 3.6.1. Performance Monitoring
- 3.6.2. Availability monitoring
- 3.6.3. Event monitoring
- 3.6.4. Log monitoring
- 3.6.5. Network traffic monitoring

3.7. Monitoring Strategy, Tools and Techniques in Cloud Infrastructures
- 3.7.1. How to set objectives and scope
- 3.7.2. Types of Monitoring
- 3.7.3. Good Practices

3.8. Continuous Improvement in Cloud Infrastructures
- 3.8.1. Continuous improvement in the cloud
- 3.8.2. Key performance metrics (KPIs) in the cloud
- 3.8.3. Designing a continuous improvement plan in the cloud

3.9. Case studies in Cloud Infrastructures
- 3.9.1. Backup case study
- 3.9.2. Monitoring case study
- 3.9.3. Lessons learned and good practices

3.10. Case studies in Cloud Infrastructures
- 3.10.1. Lab 1
- 3.10.2. Lab 2
- 3.10.3. Lab 3

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

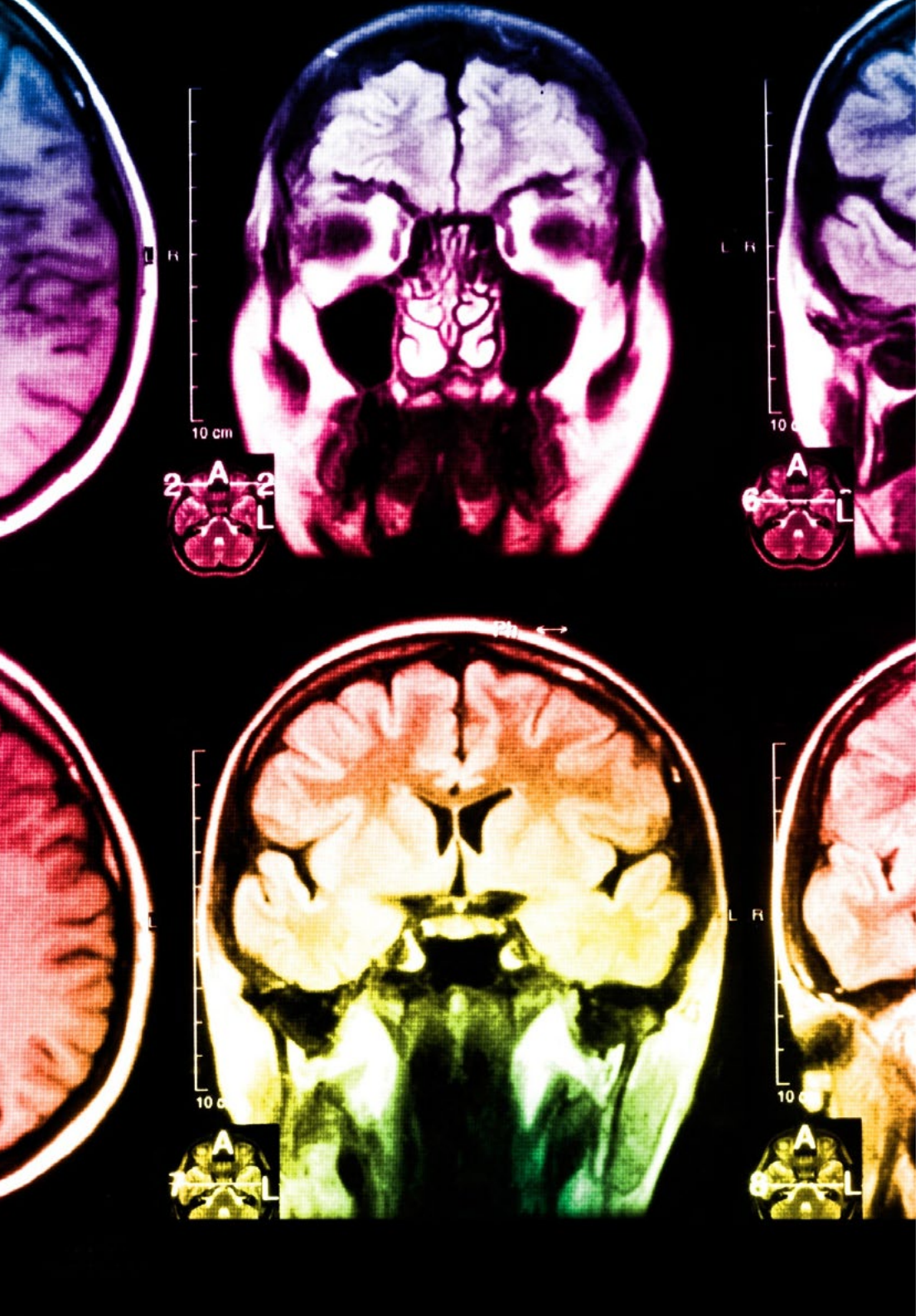
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

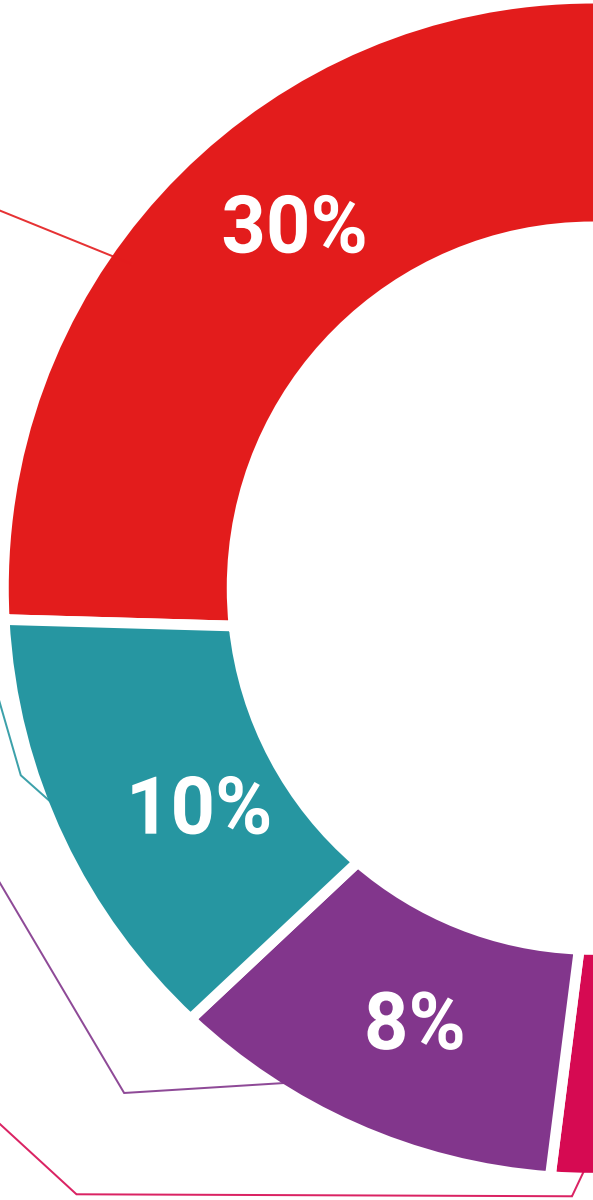
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

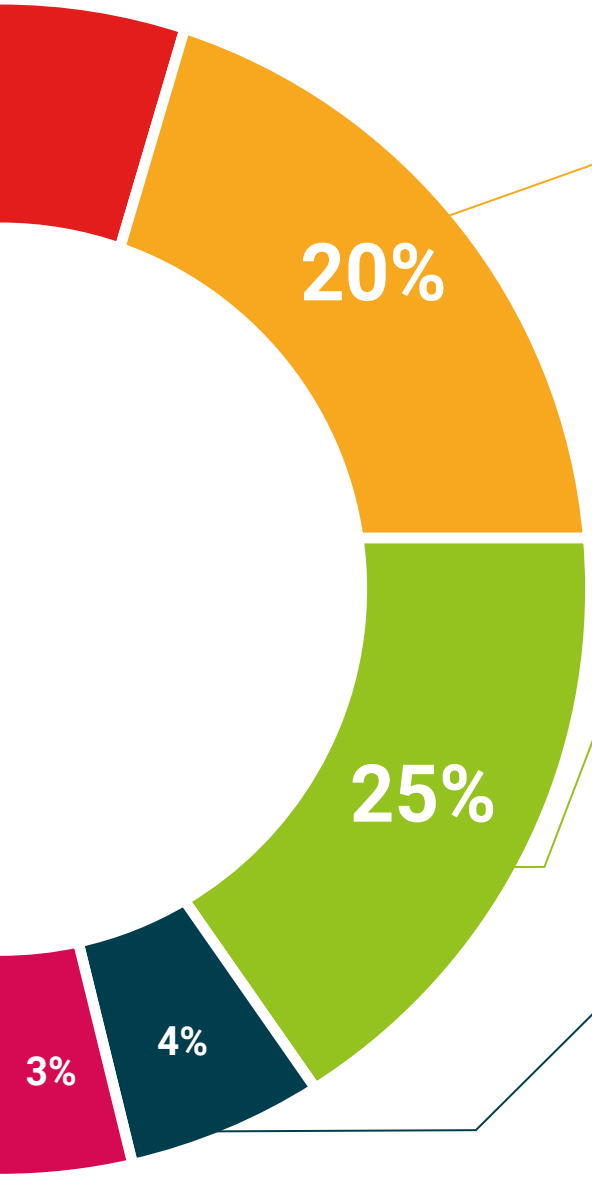
Practising Skills and Abilities

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 Diploma in Security in Cloud Infrastructures guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in Security in Cloud Infrastructures** 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 Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Security in Cloud Infrastructures**
Official Nº of Hours: **450 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Security in Cloud Infrastructures

This is a qualification awarded by this University, equivalent to 450 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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