# Postgraduate Certificate
## Advanced Red Team Exercises

tech *technological university*

# tech technological university

## Postgraduate Certificate
## Advanced Red Team Exercises

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

Website: **www.techtitute.com/us/information-technology/postgraduate-certificate/advanced-red-team-exercises**

# Index

## 01

# Introduction

In a context of increasing sophistication in cyber threats, the need for highly trained professionals in the identification and neutralization of attacks is fundamental. In this aspect, the present university program arises to address this demand, offering a comprehensive approach that prepares graduates to face the most sophisticated challenges in cybersecurity. Through this program, students acquire specific competencies in advanced threat simulation, replicating tactics and procedures employed by malicious actors. In addition, this syllabus is delivered 100% online, offering a wide range of multimedia content and applying the Relearning methodology, which reinforces learning through repetition of key concepts, ensuring comprehensive and up-to-date training.

"

*You will lead the defense against cyber threats. Become a reference in the field of Red Teaming in just 6 weeks"*

In today's complex cybersecurity scenario, characterized by an increasing sophistication of digital threats, participating in advanced Red Teaming exercises proves to be an imperative need. It is not only about addressing today's threats, but also about fostering an organizational culture of continuous improvement in cybersecurity. The ability to anticipate and adapt to constantly evolving malicious tactics is essential to safeguard the integrity of organizations in a highly dynamic environment.

The Postgraduate Certificate in Advanced Red Team Exercises emerges as a comprehensive response to these demands, offering professionals the opportunity to immerse themselves in realistic situations. The program not only addresses existing threats, but also prepares participants to anticipate and counter future challenges. It provides a solid training focused on advanced practices, whose objective is to strengthen the security posture of organizations.

At the core of the syllabus, participants will acquire key skills for the identification of vulnerabilities in the infrastructure, exploring practical and realistic exercises. Effective coordination in Red Team teams becomes a crucial aspect, optimizing the execution of tactics and strategies to comprehensively assess the security of the organization. In addition, the syllabus focuses on simulating current threat scenarios, from ransomware attacks to advanced phishing campaigns, providing professionals with the ability to assess organizational response to critical situations.

This program is offered through a 100% online modality, which not only provides flexibility for working professionals, but also reflects the same agility required to address cyber threats. In addition, the Relearning methodology is implemented, which is based on the repetition of key concepts to lock in knowledge and facilitate continuous learning. This strategic combination not only ensures up-to-date and effective training, but also empowers participants with the competencies needed to lead strategically in the ever-challenging field of cybersecurity.

This **Postgraduate Certificate in Advanced Red Team Exercises** 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 Advanced Red Team Exercises
- 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 stand out in a booming sector thanks to this 100% online syllabus with the TECH seal of quality"*

*Bet on TECH! You will master advanced techniques in digital forensics to investigate cyber incidents.*

"
*You will delve into the use of advanced Network Teaming tools, allowing the effective execution of threat simulations"*

*Get up to speed in the simulation of current threats in the best digital university in the world according to Forbes.*

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 Advanced Red Team Exercises program's main objective is to train graduates to master advanced threat simulation skills. The program focuses on replicating tactics, techniques and procedures (TTPs) used by attractive malicious actors, providing an in-depth understanding of the strategies used in cyber-attacks. Through hands-on exercises and realistic scenarios, students will develop critical skills to identify vulnerabilities, assess security posture, and strengthen infrastructure resilience against emerging cyber threats.

*Get up to speed on DCSync attack techniques to become the Red Teamer everyone is looking for. Enroll and meet your objectives"*

## 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 will address the identification and exploitation of complex vulnerabilities in systems and networks. Achieve your goals with TECH!"*
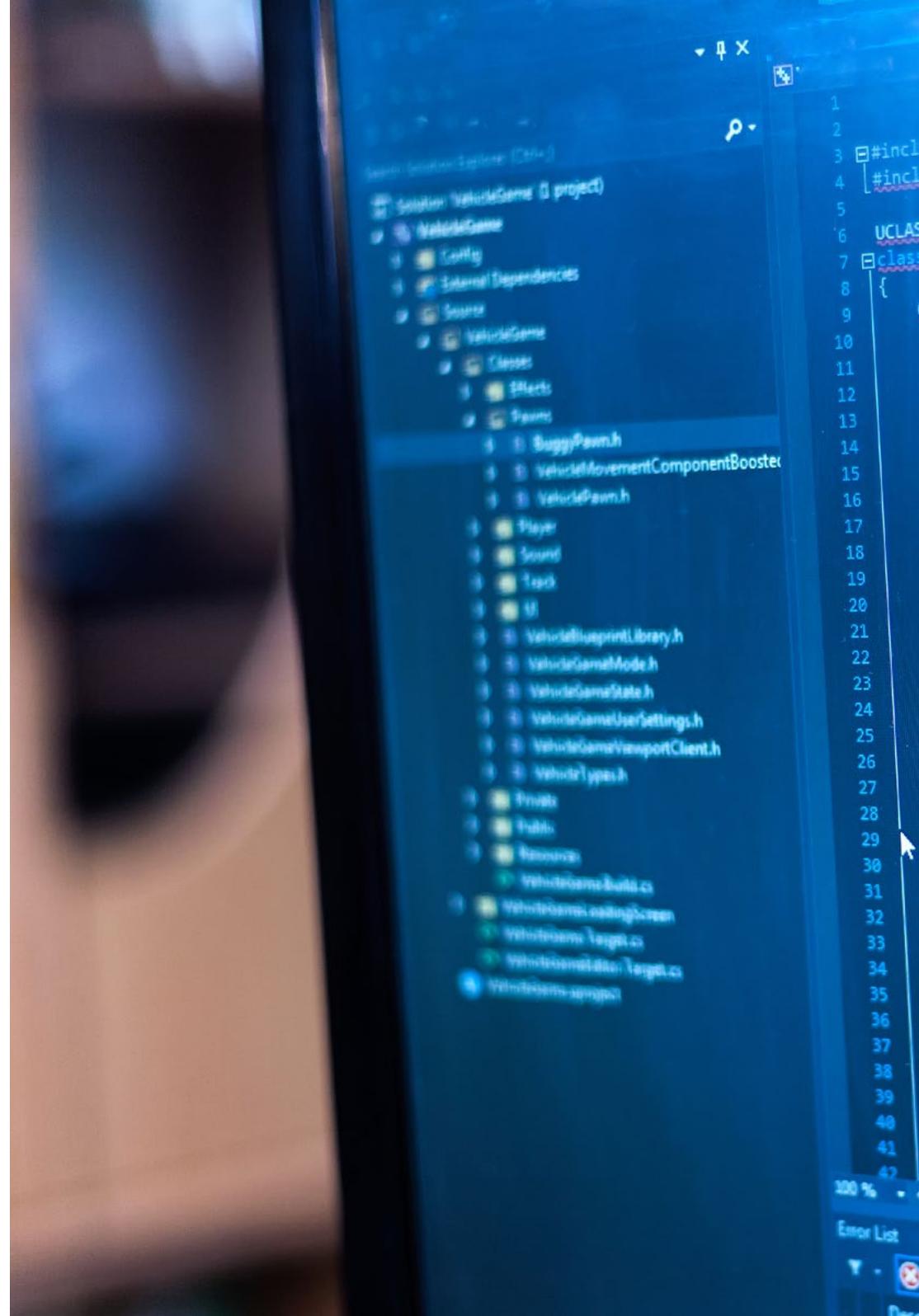
## Specific Objectives

- Develop skills in advanced threat simulation, replicating tactics, techniques and procedures (TTP) used by attractive malicious actors

- Learn to identify weaknesses and vulnerabilities in the infrastructure through realistic Red Team exercises, strengthening the security posture

- Familiarize the graduate with advanced techniques for evasion of security measures, allowing to evaluate the resistance of the infrastructure against desirable attacks

- Develop effective coordination and collaboration skills among Red Team team members, optimizing the execution of tactics and strategies to comprehensively assess the security of the organization

- Learn how to simulate current threat scenarios, such as ransom ware attacks or advanced phishing campaigns, to assess the organization's response capabilities

- Familiarize the student with post-exercise analysis techniques, evaluating the performance of the Red Team and extracting lessons learned for continuous improvement

- Develop skills to assess organizational resilience to simulated attacks, identifying areas for improvement in policies and procedures

- Learn to prepare detailed reports documenting findings, methodologies used and recommendations derived from advanced Red Team exercises

- Promote ethical and legal practices in the conduct of Red Team exercises, ensuring adherence to cybersecurity regulations and ethical standards

# 03
# Course Management

TECH has assembled an elite faculty for this academic track. In this regard, each instructor has been carefully selected for their extensive and recognized professional background in leading companies in the cybersecurity sector. In addition, these experts bring a wealth of practical experience and specialized knowledge, ensuring that course graduates benefit from the latest trends and best practices in the Red Team field. Also, with a direct, reality-based approach, this world-class faculty drives effective learning and prepares professionals to meet real-world challenges in cybersecurity.

*You will delve into advanced Red Teaming tools from the best experts in the field. Launch your career with TECH!"*

## Management



### Mr. Gómez Pintado, Carlos

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

# 04
# Structure and Content

This program immerses graduates in realistic simulations that go beyond, identifying weaknesses and vulnerabilities in infrastructures through practical and challenging Red Team exercises. Throughout the syllabus, students will sharpen their skills to design and execute advanced strategies, assessing and improving the security posture of organizations. This syllabus provides an immersive experience, allowing professionals to gain solid knowledge while strengthening network defenses against today's cyber threats.

*You will design effective phishing campaigns through 150 hours of the best digital learning"*

## Module 1. Advanced Red Team Exercises

1.1.    Advanced Recognition Techniques
    1.1.1.    Advanced Subdomain Enumeration
    1.1.2.    Advanced Google Dorking
    1.1.3.    Social Networks and theHarvester
1.2.    Advanced Phishing Campaigns
    1.2.1.    What is Reverse-Proxy Phishing?
    1.2.2.    2FA Bypass with Evilginx
    1.2.3.    Data Exfiltration
1.3.    Advanced Persistence Techniques
    1.3.1.    Golden Tickets
    1.3.2.    Silver Tickets
    1.3.3.    DCShadow Technique
1.4.    Advanced Avoidance Techniques
    1.4.1.    AMSI Bypass
    1.4.2.    Modification of Existing Tools
    1.4.3.    Powershell Obfuscation
1.5.    Advanced Lateral Movement Techniques
    1.5.1.    Pass-the-Ticket (PtT)
    1.5.2.    Overpass-the-Hash (Pass-the-Key)
    1.5.3.    NTLM Relay
1.6.    Advanced Post-Exploitation Techniques
    1.6.1.    LSASS Dump
    1.6.2.    SAM Dump
    1.6.3.    DCSync Attack
1.7.    Advanced Pivoting Techniques
    1.7.1.    What Is Pivoting
    1.7.2.    Tunneling with SSH
    1.7.3.    Pivoting with Chisel
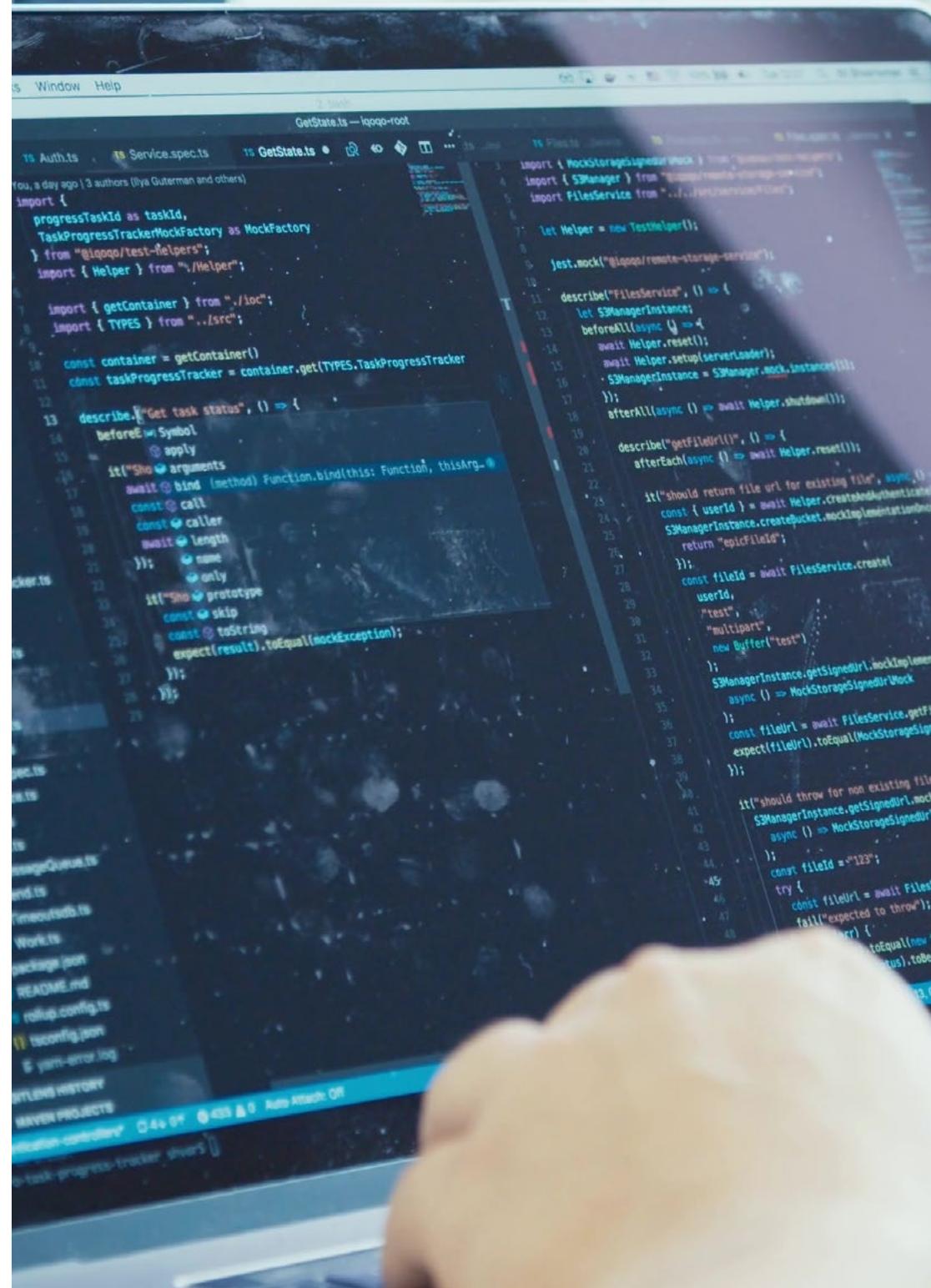
*Forget about memorizing! With the Relearning system you will integrate the concepts in a natural and progressive way"*

# 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

30%

10%

8%

**20%**

**25%**

**4%**

**3%**

### 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.

# Certificate

The Postgraduate Certificate in Advanced Red Team Exercises guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Advanced Red Team Exercises** 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 in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Advanced Red Team Exercises**
Official Nº of Hours: **150 h.**

_tech_ technological university

Awards the following

**DIPLOMA**

to

Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

**POSTGRADUATE CERTIFICATE**

in

Advanced Red Team Exercises

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S    techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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