



## Postgraduate Certificate

IoT Cybersecurity

» Modality: online

» Duration: 6 weeks

» Certificate: TECH Global University

» Accreditation: 6 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/school-of-business/postgraduate-certificate/lot-cybersecurity

## Index

Welcome p. 4

02

Why Study at TECH?

03

Why Our Program?

Objectives

p. 14

05

Structure and Content

p. 18

p. 36

p. 6

06

Methodology

p. 24

p. 42

p. 10

Our Students' Profiles

p. 32

80

Course Management

Impact on Your Career

Benefits for Your Company

p. 46

Certificate

# 01 **Welcome**

Everyday life increasingly relies on connectivity and access to the Internet. And not only in the workplace, but in our personal lives as well. From home automation to GPS in our cars and on our phones, which allows us to monitor our homes while traveling safely, to having constant access to virtually all the information on the world wide web. It can also be seen in crucial services such as healthcare, whose methods have advanced significantly with the emergence of increasingly accurate robots. In short, a myriad of applications that have invaded our lives, almost without noticing it, to make them more convenient. But the fact all these new technologies are connected to the Internet creates vulnerabilities when considering potentially dangerous breaches that could allow the wrong people to access personal data, which could cause serious personal or corporate damage. This TECH program seeks to meet the specialization needs of business professionals in loT cybersecurity.









## tech 08 | Why Study at TECH?

### At TECH Technological University



### Innovation

The university offers an online learning model that balances the latest educational technology with the most rigorous teaching methods. A unique method with the highest international recognition that will provide students with the keys to develop in a rapidly-evolving world, where innovation must be every entrepreneur's focus.

"Microsoft Europe Success Story", for integrating the innovative, interactive multi-video system.



### The Highest Standards

Admissions criteria at TECH are not economic. Students don't need to make a large investment to study at this university. However, in order to obtain a qualification from TECH, the student's intelligence and ability will be tested to their limits. The institution's academic standards are exceptionally high...

95%

of TECH students successfully complete their studies



### Networking

Professionals from countries all over the world attend TECH, allowing students to establish a large network of contacts that may prove useful to them in the future.

+100000

+200

executives prepared each year

different nationalities



### **Empowerment**

Students will grow hand in hand with the best companies and highly regarded and influential professionals. TECH has developed strategic partnerships and a valuable network of contacts with major economic players in 7 continents.

+500

collaborative agreements with leading companies



### **Talent**

This program is a unique initiative to allow students to showcase their talent in the business world. An opportunity that will allow them to voice their concerns and share their business vision.

After completing this program, TECH helps students show the world their talent.



### **Multicultural Context**

While studying at TECH, students will enjoy a unique experience. Study in a multicultural context. In a program with a global vision, through which students can learn about the operating methods in different parts of the world, and gather the latest information that best adapts to their business idea.

TECH students represent more than 200 different nationalities.



### Learn with the best

In the classroom, TECH's teaching staff discuss how they have achieved success in their companies, working in a real, lively, and dynamic context. Teachers who are fully committed to offering a quality specialization that will allow students to advance in their career and stand out in the business world.

Teachers representing 20 different nationalities.



At TECH, you will have access to the most rigorous and up-to-date case analyses in academia"

### Why Study at TECH? | 09 tech

TECH strives for excellence and, to this end, boasts a series of characteristics that make this university unique:



### **Analysis**

TECH explores the student's critical side, their ability to question things, their problem-solving skills, as well as their interpersonal skills.



### **Academic Excellence**

TECH offers students the best online learning methodology. The university combines the Relearning method (postgraduate learning methodology with the best international valuation) with the Case Study. Tradition and vanguard in a difficult balance, and in the context of the most demanding educational itinerary.



### **Economy of Scale**

TECH is the world's largest online university. It currently boasts a portfolio of more than 10,000 university postgraduate programs. And in today's new economy, **volume + technology = a ground-breaking price**. This way, TECH ensures that studying is not as expensive for students as it would be at another university.



Studying this TECH program means increasing the chances of achieving professional success in senior business management.

It is a challenge that demands effort and dedication, but it opens the door to a promising future. Students will learn from the best teaching staff and with the most flexible and innovative educational methodology.



## tech 12 | Why Our Program?

This program will provide you with a multitude of professional and personal advantages, among which we highlight the following:



### A Strong Boost to Your Career

By studying at TECH, students will be able to take control of their future and develop their full potential. By completing this program, students will acquire the skills required to make a positive change in their career in a short period of time.

70% of students achieve positive career development in less than 2 years.



## Develop a strategic and global vision of the company

TECH offers an in-depth overview of general management to understand how each decision affects each of the company's different functional fields.

Our global vision of companies will improve your strategic vision.



### Consolidate the student's senior management skills

Studying at TECH means opening the doors to a wide range of professional opportunities for students to position themselves as senior executives, with a broad vision of the international environment.

You will work on more than 100 real senior management cases.



### You will take on new responsibilities

The program will cover the latest trends, advances and strategies, so that students can carry out their professional work in a changing environment.

45% of graduates are promoted internally.



### Access to a powerful network of contacts

TECH connects its students to maximize opportunities. Students with the same concerns and desire to grow. Therefore, partnerships, customers or suppliers can be shared.

You will find a network of contacts that will be instrumental for professional development.



### Thoroughly develop business projects.

Students will acquire a deep strategic vision that will help them develop their own project, taking into account the different fields in companies.

20% of our students develop their own business idea.



### Improve soft skills and management skills

TECH helps students apply and develop the knowledge they have acquired, while improving their interpersonal skills in order to become leaders who make a difference.

Improve your communication and leadership skills and enhance your career.



### You will be part of an exclusive community

Students will be part of a community of elite executives, large companies, renowned institutions, and qualified teachers from the most prestigious universities in the world: the TECH Technological University community.

We give you the opportunity to study with a team of world-renowned teachers.





## tech 16 | Objectives

## TECH makes the goals of their students their own goals too Working together to achieve them

The **Postgraduate Certificate in IoT Cybersecurity** qualifies students to:



Examine the evolution and impact of IoT



Analyze the main IoT architectures



Determine the parts of an IoT project





Identify, analyze and assess security risks of the IoT project parts.



Examine connectivity technologies



Develop the main application protocols



Assess risk levels and known vulnerabilities



09

Develop safe use policies



Specify the different types of existing devices



Establish appropriate conditions of use for these devices





### tech 20 | Structure and Content

### **Syllabus**

TECH Global University's Postgraduate Certificate in IoT Cybersecurity is an intensive program that prepares students to address business challenges and decisions in the field of IT security. Its content is designed to promote the development of managerial skills that enable more rigorous decision-making in uncertain environments.

Over 150 hours of study, students will analyze a multitude of practical cases through individual work, which will allow them to acquire skills required to develop successfully in their daily practice. It is, therefore, an authentic immersion in real business situations.

This program deals with the different areas of a company in depth, and it is designed for managers to understand cybersecurity from a strategic, international and innovative perspective.

A program designed especially for students, focused on their professional development, which prepares them to achieve excellence in the field of information security management and administration. A program that understands your needs and those of your company through innovative content based on the latest trends, and supported by the best educational methodology and an exceptional faculty, which will provide you with the skills to solve critical situations in a creative and efficient way.

It is a program which is carried out in six weeks and is divided into one module:

Module 1

IoT Security



### Where, When and How is it Taught?

TECH offers students the opportunity to take this Postgraduate Certificate in IoT Cybersecurity entirely online. During the 6 weeks of the specialization, the student will be able to access all the contents of this program at any time, which will allow the students to self-manage their study time.

A unique, key, and decisive educational experience to boost your professional development and make the definitive leap.

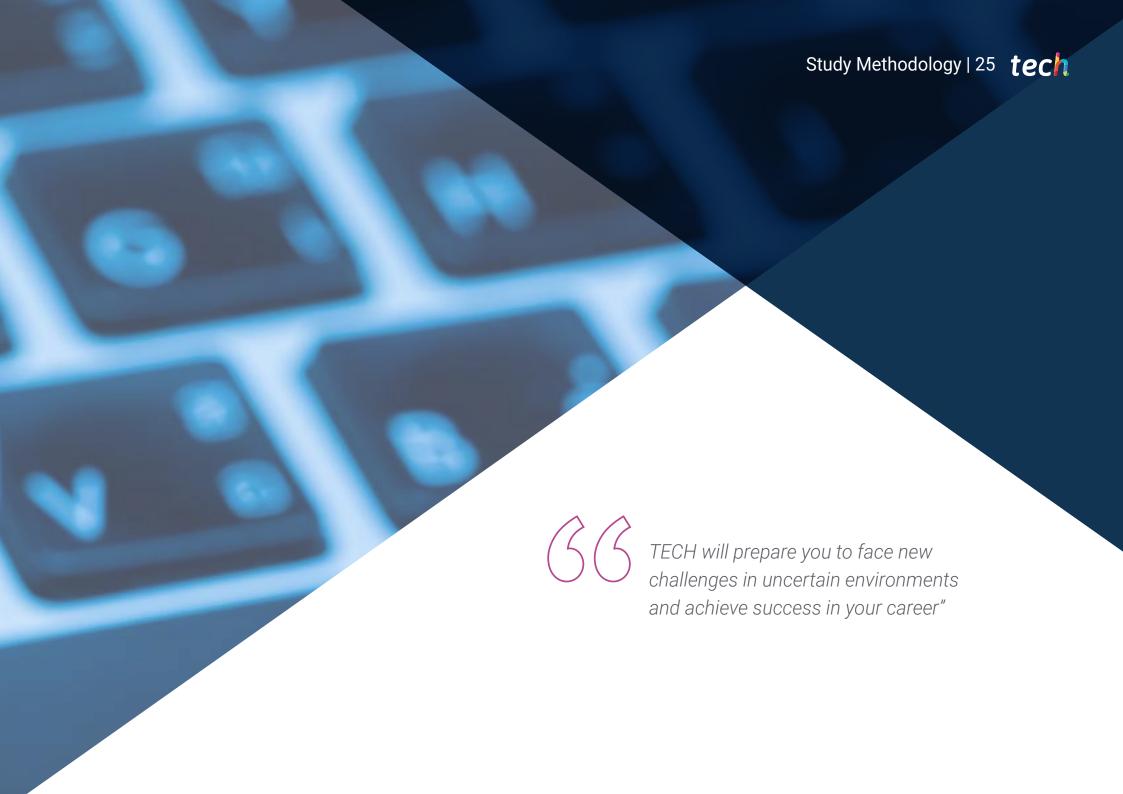
## tech 22 | Structure and Content

Module 1. IoT Security					
1.1.1. 1 1.1.2. \$	Types of Devices Standardized Architectures 1.1.2.1. ONEM2M 1.1.2.2. IoTWF Application Protocols	1.2. IoT Devices. Areas of Application 1.2.1. SmartHome 1.2.2. SmartCity 1.2.3. Transportation 1.2.4. Wearables 1.2.5. Health Sector 1.2.6. IIoT	1.3. Communication Protocols 1.3.1. MQTT 1.3.2. LWM2M 1.3.3. OMA-DM 1.3.4. TR-069	1.4.1. 1.4.2. 1.4.3.	SmartHome Home Automation Networks Household Appliances Surveillance and Security
1.5.1. I 1.5.2. I	9 9	<ul><li>1.6. Transportation</li><li>1.6.1. Localization</li><li>1.6.2. Making Payments and Obtaining Services</li><li>1.6.3. Connectivity</li></ul>	<ul><li>1.7. Wearables</li><li>1.7.1. Smart Clothing</li><li>1.7.2. Smart Jewelry</li><li>1.7.3. Smart Watches</li></ul>	1.8.2. 1.8.3.	Health Sector  Exercise/Heart Rate Monitoring Monitoring of Patients and Elderly People Implantables Surgical Robots
1.9.1. \ 1.9.2.	Connectivity Wi-Fi/Gateway Bluetooth Built-in Connectivity	1.10. Securitization 1.10.1. Dedicated Networks 1.10.2. Password Managers 1.10.3. Use of Encrypted Protocols 1.10.4. Tips for Use			







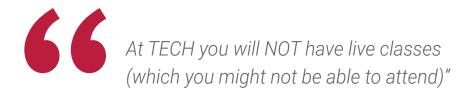


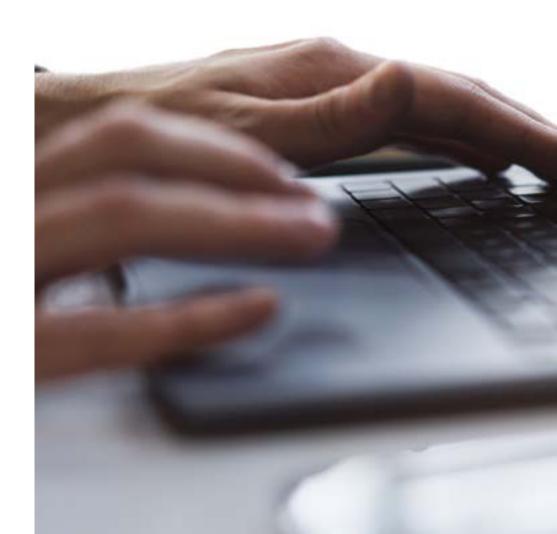
### The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.







### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.



TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"

## tech 28 | Study Methodology

### Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



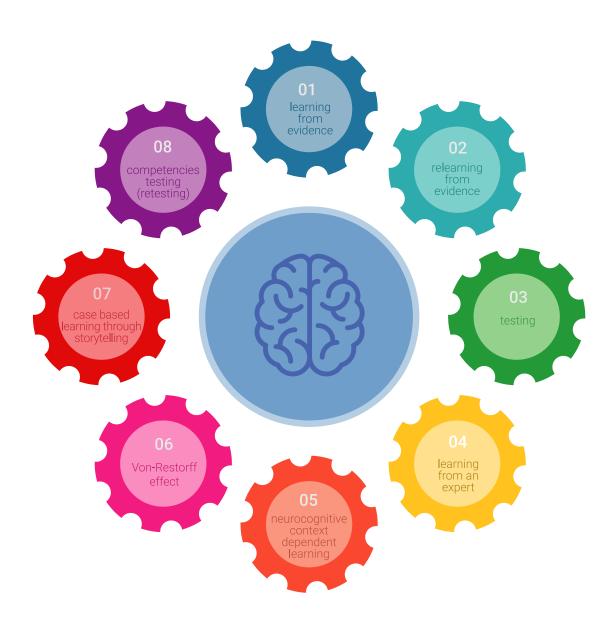
### Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.



## tech 30 | Study Methodology

### A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

### The effectiveness of the method is justified by four fundamental achievements:

- 1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
- 2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
- 3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
- **4.** Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



### tech 32 | Study Methodology

As such, the best educational materials, thoroughly prepared, will be available in this program:



### **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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



### **Practicing Skills and Abilities**

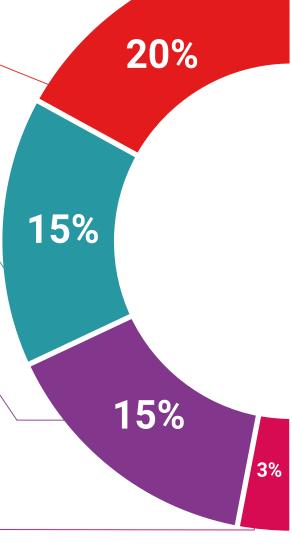
You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### **Interactive Summaries**

We present 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".





### **Additional Reading**

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.

### Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



### **Testing & Retesting**

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



#### Classes

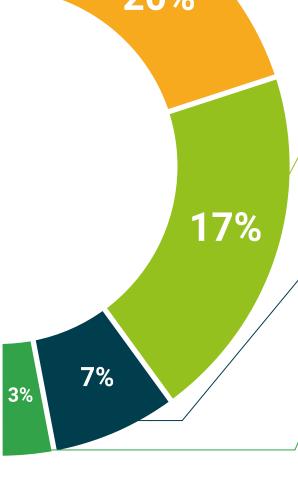
There is scientific evidence suggesting that observing third-party experts can be useful.



Learning from an expert strengthens knowledge and memory, and generates confidence for future difficult decisions.

### **Quick Action Guides**

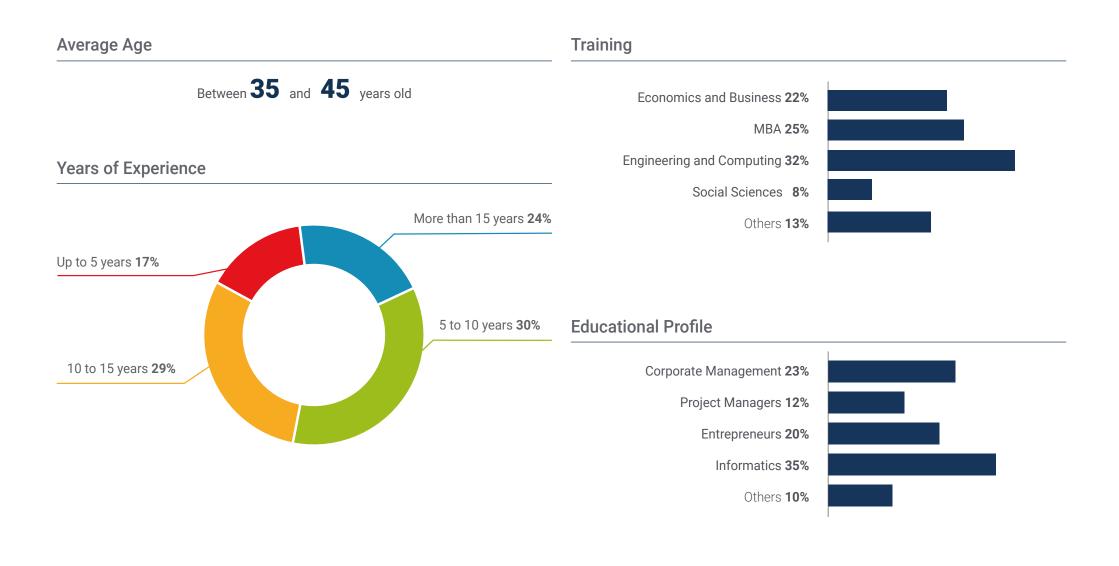
TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.



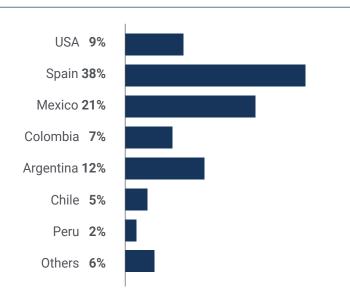




## tech 36 | Our Students' Profiles



#### **Geographical Distribution**





# Jaime Díaz

#### Chief Revenue Officer

"Completing this TECH program gave me the opportunity to acquire the knowledge I needed to use specific techniques to protect my company's mobile phones against potential malicious attacks that can cause serious damage, theft or misuse of confidential information. I will no doubt enrol again to further my training."





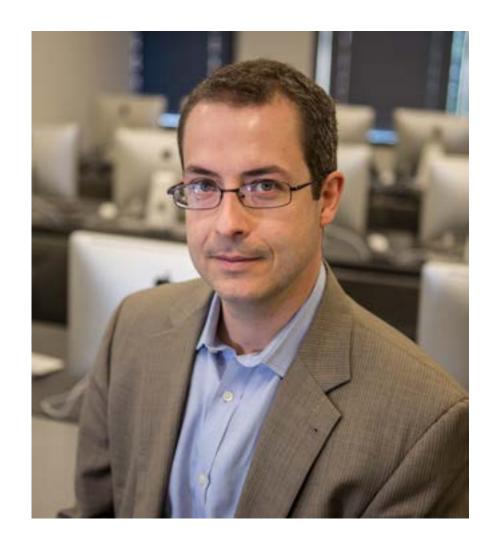
#### **International Guest Director**

Dr. Frederic Lemieux is internationally recognized as an innovative expert and inspirational leader in the fields of Intelligence, National 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 the understanding of today's emerging technologies. During his professional career, he has conceptualized and directed cutting-edge academic programs in 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 international security. He has also made a significant contribution to the field of **Cybersecurity** with the publication of numerous articles in academic journals, examining crime control during major disasters, counter-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.

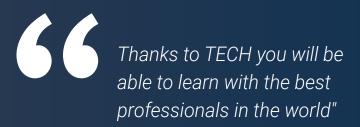
Dr. Lemieux has held editorial and evaluative roles in different academic, private and governmental organizations, reflecting his influence and commitment to excellence in his field of expertise.

As such, 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

- Director of the Master's Degree in Cybersecurity Risk Management at Georgetown, Washington, United States
- Director of the Master in Technology Management at Georgetown University
- Director of the Master in Applied Intelligence at Georgetown University
- Professor of Internships at Georgetown University
- PhD in Criminology from the School of Criminology at the University of Montreal
- B.A. in Sociology and Minor Degree in Psychology from Laval University
- Member of: New Program Roundtable Committee, Georgetown University



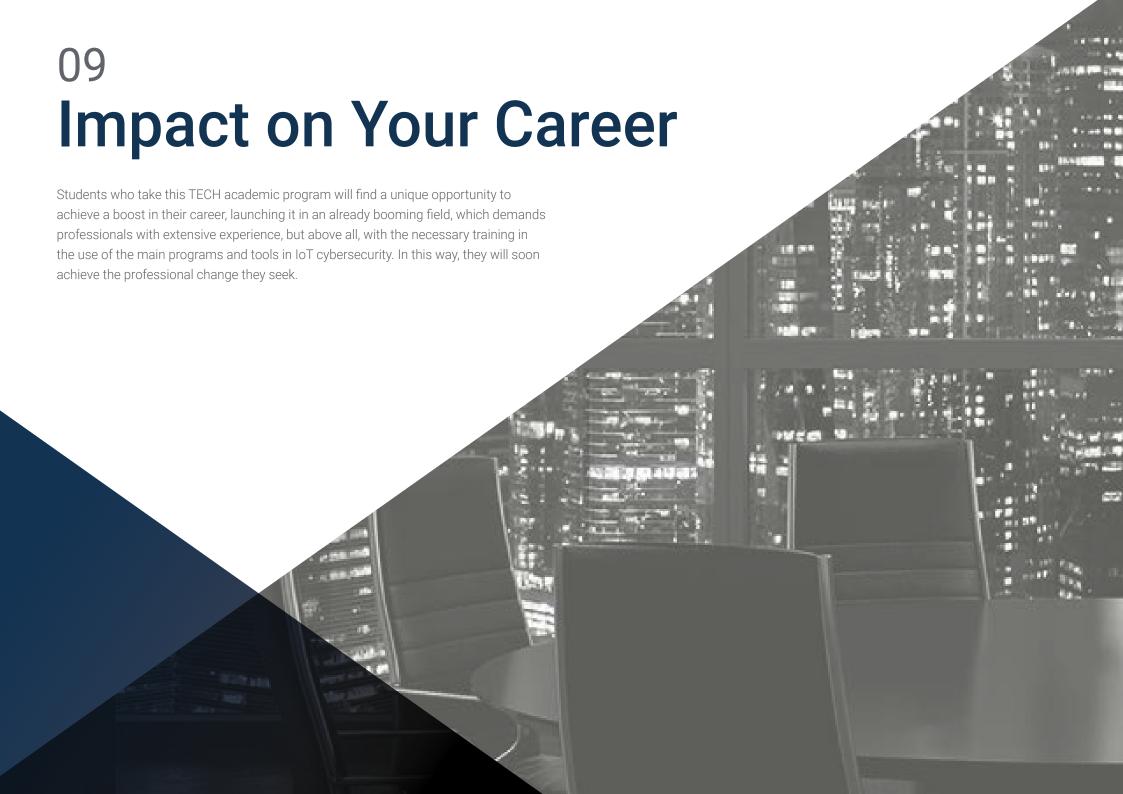
#### Management

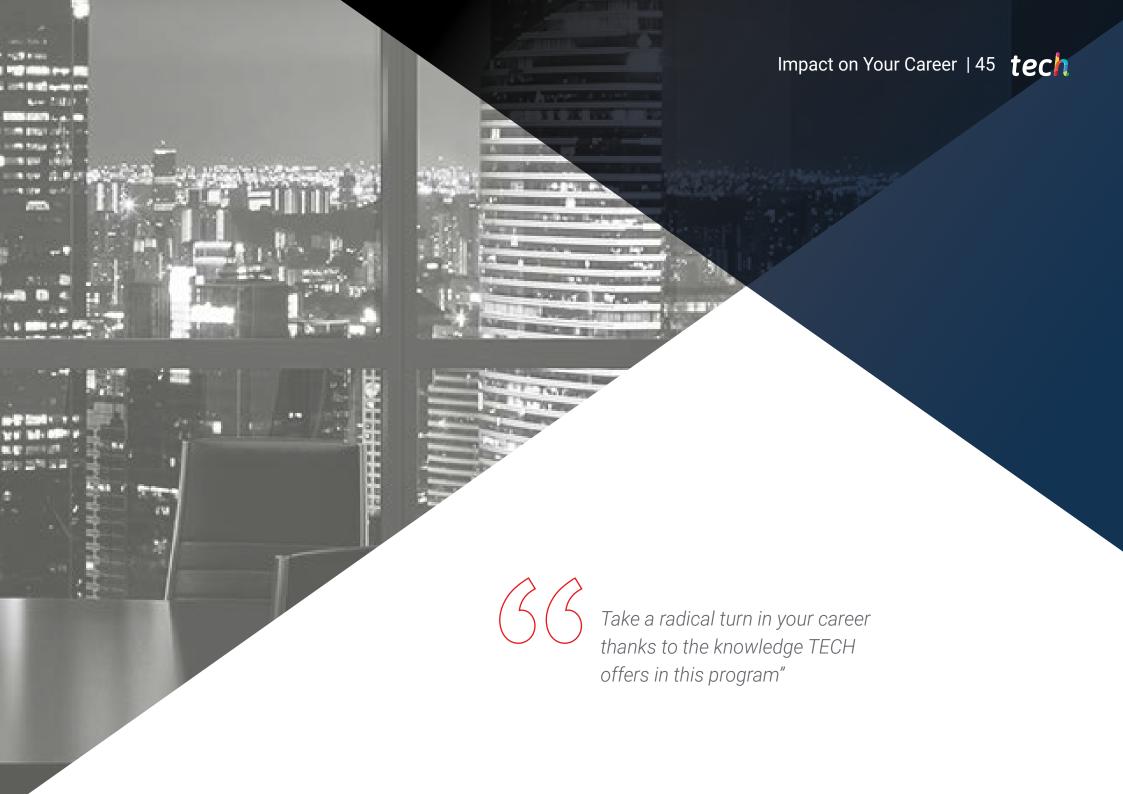


#### Ms. Fernández Sapena, Sonia

- Trainer in Computer Security and Ethical Hacking at the National Reference Center of Getafe in Computer Science and Telecommunications in Madrid
- Certified E-Council instructor
- Trainer in the following certifications: EXIN Ethical Hacking Foundation and 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)
- External collaborator CSO/SSA (Chief Security Officer/Senior Security Architect) at the University of the Balearic Islands
- Degree in Computer Engineering from the University of Alcalá de Henares, Madrid.
- Master's Degree in DevOps: Docker and Kubernetes. Cas-Training
- Microsoft Azure Security Techonologies. E-Council







# Are you ready to take the leap? Excellent professional development awaits you

The Postgraduate Certificate in IoT Cybersecurity at TECH Global University is an intensive and highly valuable program aimed at improving students' professional skills in an area of fierce competition. Undoubtedly, it is a unique opportunity to improve professionally, but also personally, as it involves effort and dedication.

Those who wish to improve themselves, achieve a positive change at a professional level and interact with the best, will find their place at TECH.

If you want your CV to stand out in selection processes, do not hesitate and join TECH.

A high-level program for you to improve your competitiveness and employability.

#### **Time of Change**



#### Type of change



## Salary increase

This program represents a salary increase of more than 25.22% for our students.

Salary before **57,900** 

A salary increase of

25.22%

Salary after **72,500** 





# tech 50 | Benefits for Your Company

Developing and retaining talent in companies is the best long-term investment.



# Intellectual Capital and Talent Growth

You will introduce the company to new concepts, strategies, and perspectives that can bring about significant changes in the organization.



# Retaining high-potential executives to avoid talent drain

This program strengthens the link between the company and the executive and opens new avenues for professional growth within the company.



## Building agents of change

You will be able to make decisions in times of uncertainty and crisis, helping the organization overcome obstacles.



### Increased international expansion possibilities

Thanks to this program, the company will come into contact with the main markets of the world economy.





## Project Development

You will be able to work on a current project or develop new projects in the field of R&D or Business Development within the company.

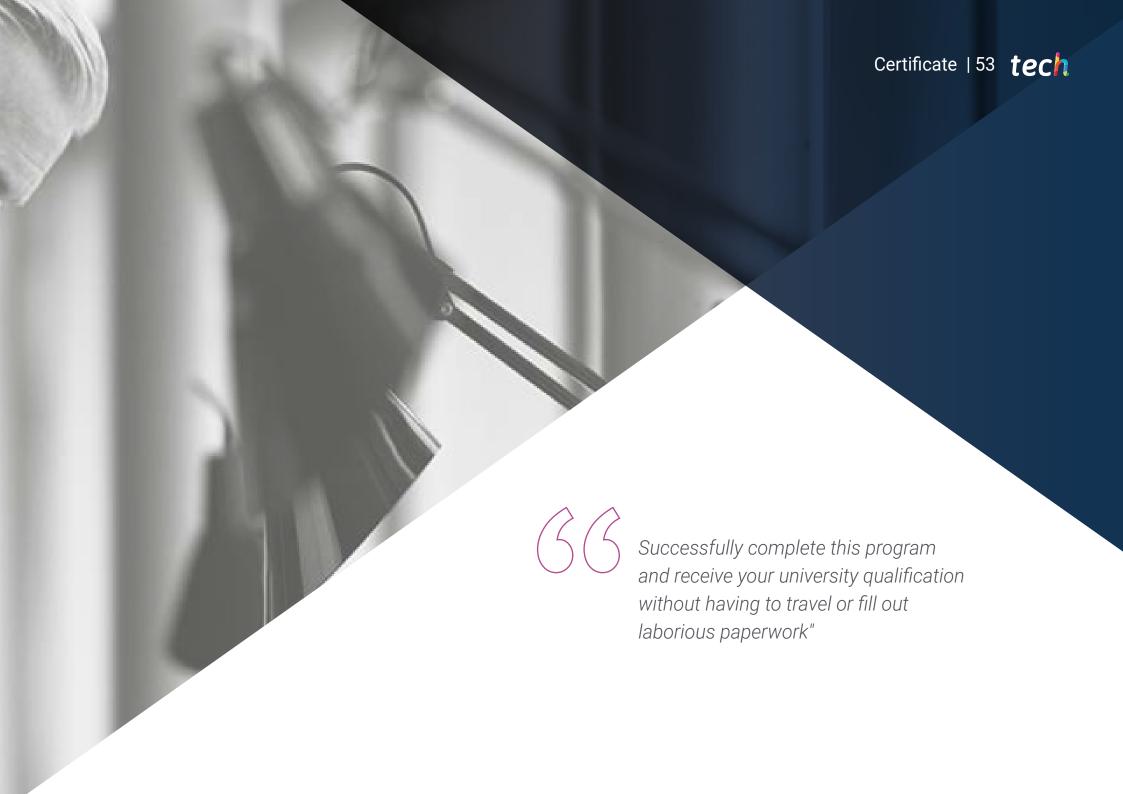


# Increased competitiveness

This Executive Master's Degree will equip students with the skills to take on new challenges and drive the organization forward.







# tech 54 | Certificate

This private qualification will allow you to obtain an Postgraduate Certificate in IoT Cybersecurity 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** private qualification, 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 IoT Cybersecurity

Modality: online

Duration: 6 weeks

Accreditation: 6 ECTS



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



<sup>\*</sup>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



# Postgraduate Certificate IoT Cybersecurity

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