

Postgraduate Certificate Computer Networks and Emerging Technologies



Postgraduate Certificate Computer Networks and Emerging Technologies

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Global University
- » Credits: 12 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/information-technology/postgraduate-certificate/computer-networks-emerging-technologies

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Structure and Content

p. 12

04

Methodology

p. 16

05

Certificate

p. 24

01

Introduction

The professional will be able to develop your skills and knowledge in Computer Networks Emerging Technologies with this high-level Training taught by industry experts. Therefore, you will learn the latest techniques and innovations, in a practical and rigorous way, 100% online.



“

This Postgraduate Certificate will allow you to up to date your knowledge in Computer Networks in a practical way, 100% online, without renouncing to the maximum academic rigor”

This program is aimed at those interested in attaining a higher level of knowledge and Emerging Technologies Networks. The main objective is for students to specialize their knowledge in simulated work environments and conditions in a rigorous and realistic manner so they can later apply it in the real world.

This program will prepare scientifically and technologically, as well as to develop the professional practice of IT engineering, with a transversal and versatile approach adapted to the new technologies and innovations in this field. Students will gain extensive knowledge and Emerging Technologies Networks from professionals in the field.

The students will be able to take the opportunity and study this program in a 100% online format, without neglecting their obligations. Up to date your knowledge and study a Postgraduate Certificate in Computer Networks Emerging Technologies to continue growing personally and professionally.

This **Postgraduate Certificate in Computer Networks and Emerging Technologies** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ Development of 100 simulated scenarios presented by experts in Computer Networks
- ◆ The graphic, schematic and practical contents with which they are conceived provide scientific and practical information on and Emerging Technologies Networks
- ◆ News on the latest developments in Computer Networks and Emerging Technologies
- ◆ It contains practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Interactive learning system based on the case method and its application to real practice
- ◆ All of this will be complemented by 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



Learn the latests techniques and strategies with this program and achieve the sucess as an IT Engineer”

“

Learn about Computer Networks and Emerging Technologies with this intensive program, from the comfort of your home”

Take advantage of the latest educational technology to update on Computer Networks from the comfort of your home.

Learn about the latest techniques in Computer Networks from experts in the field.

It includes in its teaching staff professionals belonging to the field of education, who bring to this program their work experience, in addition to recognized specialists belonging to reference 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 an immersive program designed to learn in real situations.

The program design is centered around Problem-Based Learning, in which students will resolve professional practice situations that may arise throughout the course. For this purpose, the professionals will be assisted by an innovative interactive video system created by recognized experts in Computers Networks with extensive teaching experience.



02 Objectives

The objective of this program is to provide IT professionals with the knowledge and skills necessary to carry out their activity using the most advanced protocols and techniques of the moment. Through a work approach that is totally adaptable to the student, this Postgraduate Certificate will progressively lead the students to acquire the competencies that will propel them to a Upper professional level.



“

Achieve the level of knowledge you desire and master the fundamental concepts in Computer Networks with this high-level educational program”



General Objectives

- ◆ Prepare scientifically and technologically, as well as to develop the professional practice Emerging Structure and Technology, with a transversal and versatile approach adapted to the new technologies and innovations in this field
- ◆ Obtain wide knowledge in the field of IT engineering, structure of computers and in Computer Networks and Emerging Technologies, including the mathematical, statistical and physical basis which is essential in engineering

“ Enroll in the best Computer Networks program in current university escenario”





Specific Objectives

- ◆ Acquire the essential knowledge of computer networks on the Internet
- ◆ Understand the functioning of the different layers that define a networked system, such as the application, transport, network and link layers
- ◆ Understand the composition of LANs, their topology, network and interconnection elements
- ◆ Learn how IP addressing and Subnetting works
- ◆ Understand the structure of wireless and mobile networks, including the new 5G network
- ◆ Know the different network security mechanisms, as well as the different Internet security protocols
- ◆ Knowledge of the different mobile technologies and services currently available in the market
- ◆ Learn how to design user experiences adapted to the new emerging technologies available today
- ◆ Know the new developments in the world of extended reality, with AR and VR applications and services, as well as location-based services
- ◆ Understand how the Internet of Things (IoT) works, its fundamentals, main components, cloud computing and smart cities
- ◆ Acquire the basic knowledge to understand the fundamentals of blockchain and blockchain-based applications and services
- ◆ Learn the latest innovative technologies and the basics of research

03

Structure and Content

The structure of the contents has been designed by a team of IT engineering professionals, aware of the relevance of current preparation in order to delve into this area of knowledge , in order to humanistically enrich the students and raise the level of knowledge in Computer Networks and Emerging Technologies through the latest educational technologies available.



“

This Postgraduate Certificate in Computer Networks and Emerging Technologies contains the most complete and up-to-date of learning program on the market”

Module 1. Computer Networks

- 1.1. Computer Networks on the Internet
 - 1.1.1. Networks and Internet
 - 1.1.2. Protocol Architecture
- 1.2. The Application Layer
 - 1.2.1. Model and Protocols
 - 1.2.2. FTP and SMTP Services
 - 1.2.3. DNS Service
 - 1.2.4. HTTP Operation Model
 - 1.2.5. HTTP Message Formats
 - 1.2.6. Interaction with Advanced Methods
- 1.3. The Transport Layer
 - 1.3.1. Communication Between Processes
 - 1.3.2. Connection-oriented Transportation: TCP and SCTP
- 1.4. The Network Layer
 - 1.4.1. Circuit and Packet Switching
 - 1.4.2. IP Protocol (v4 and v6)
 - 1.4.3. Routing Algorithms
- 1.5. The Link Layer
 - 1.5.1. Link Layer and Error Detection and Correction Techniques
 - 1.5.2. Multiple Access Links and Protocols
 - 1.5.3. Link Level Addressing
- 1.6. LAN Networks
 - 1.6.1. Network Topologies
 - 1.6.2. Network and Interconnection Elements
- 1.7. IP Addressing
 - 1.7.1. IP Addressing and *Subnetting*
 - 1.7.2. Overview: An HTTP Request
- 1.8. Wireless and Mobile Networks
 - 1.8.1. 2G, 3G and 4G Mobile Networks and Services
 - 1.8.2. 5G Networks

- 1.9. Network Security
 - 1.9.1. Fundamentals of Communications Security
 - 1.9.2. Access Control
 - 1.9.3. System Security
 - 1.9.4. Fundamentals of Cryptography
 - 1.9.5. Digital Signature
- 1.10. Internet Security Protocols
 - 1.10.1. IP Security and Virtual Private Networks (VPN)
 - 1.10.2. Web Security with SSL/TLS

Module 2. Emerging Technologies

- 2.1. Mobile Technologies
 - 2.1.1. Mobile Devices
 - 2.1.2. Mobile Communications
- 2.2. Mobile Services
 - 2.2.1. Types of Applications
 - 2.2.2. Decision on the Type of Mobile Application
 - 2.2.3. Mobile Interaction Design
- 2.3. Location-based Services
 - 2.3.1. Location-based Services
 - 2.3.2. Technologies for Mobile Localization
 - 2.3.3. GNSS-based Localization
 - 2.3.4. Accuracy and Accuracy in Localization Technologies
 - 2.3.5. Beacons: Location by Proximity
- 2.4. User Experience (UX) Design
 - 2.4.1. Introduction to User Experience (UX)
 - 2.4.2. Technologies for Mobile Localization
 - 2.4.3. Methodology for UX Design
 - 2.4.4. Best Practices in the Prototyping Process

- 2.5. Extended Reality
 - 2.5.1. Extended Reality Concepts
 - 2.5.2. Technologies for Mobile Localization
 - 2.5.3. AR and VR Application and Services
- 2.6. The Internet of Things (IoT) I
 - 2.6.1. IoT Fundamentals
 - 2.6.2. IoT Devices and Communications
- 2.7. The Internet of Things (IoT) II
 - 2.7.1. Beyond Cloud Computing
 - 2.7.2. (Smart Cities)
 - 2.7.3. Digital Twins
 - 2.7.4. IoT Projects
- 2.8. Blockchain
 - 2.8.1. Blockchain Fundamentals
 - 2.8.2. Blockchain-based Applications and Services
- 2.9. Autonomous Driving
 - 2.9.1. Technologies for Autonomous Driving
 - 2.9.2. V2X Communications
- 2.10. Innovative Technology and Research
 - 2.10.1. Fundamentals of Quantum Computing
 - 2.10.2. Applications of Quantum Computing
 - 2.10.3. Introduction to Research



A unique, key, and decisive educational experience to boost your professional development”

04 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.



05 Certificate

The Postgraduate Certificate in Computer Networks and Emerging Technologies guarantees you, in addition to the most rigorous and updated training, access to a Executive Master's Degree 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 Computer Networks and Emerging Technologies** 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 Computer Networks and Emerging Technologies**

Modality: **online**

Duration: **12 weeks**

Accreditation: **12 ECTS**



*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.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
online training
development language
classroom



Postgraduate Certificate Computer Networks and Emerging Technologies

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Global University
- » Credits: 12 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Certificate Computer Networks and Emerging Technologies

