Postgraduate Certificate
Communication and Coordination of Computing Systems

tech technological university

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Postgraduate Certificate

Communication and Coordination of Computing Systems

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

Website: www.techtitute.com/in/information-technology/postgraduate-certificate/communication-coordination-computing-systems

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01

Introduction

Since the distribution and commercialization of the first computers in the mid to late 20th century, technology has advanced by leaps and bounds in just a few decades. Information exchanges today are massive compared to back then, requiring increasingly efficient communication and coordination. The role of computer professionals in this progress has been crucial, playing a fundamental and increasingly specialized role in various computing projects. This university program precisely delves into the necessary knowledge to master modern communication and coordination of various computing systems.

Enroll today to discover all the secrets of the most advanced communication and coordination systems that are currently on the market"

To excel in the new computing paradigm, it is not only important to have a thorough understanding of the new computing systems, but also to delve into the different machines that participate in the parallel and distributed computing system. It is also important to understand how these machines coordinate and communicate with each other in order to improve the efficiency of a specific communication system.

This Postgraduate Certificate, created by highly prestigious computer professionals, delves precisely into these matters. The study plan analyzes the changes that have occurred in the Communication and Coordination of Computing Systems, as well as the possible scenarios that IT professionals may face and the solutions to be implemented to achieve maximum performance.

All of this is offered in a 100% online format that does not require physical attendance or adherence to fixed schedules. The students themselves have the power to decide when, where, and how to take on the entire academic workload.

This Postgraduate Certificate offers a valuable incentive that enables individuals to balance their studies with demanding professional activities and personal responsibilities.

This **Postgraduate Certificate in Communication and Coordination in Computing Systems** 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 Parallel and Distributed Computing
- The program is designed with graphical, schematic, and highly practical content, which gathers essential information about disciplines that are crucial for the professional practice
- The practical exercises provide an opportunity for self-assessment and improvement of learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions for experts and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection

Highly skilled professionals from various sectors of the IT industry have prepared all the educational materials, understanding your needs and the realities of the current market"

You will graduate from this Postgraduate Certificate with significantly enhanced knowledge in Communication and Coordination, which will provide you with a distinct advantage to lead your own IT projects in this field"

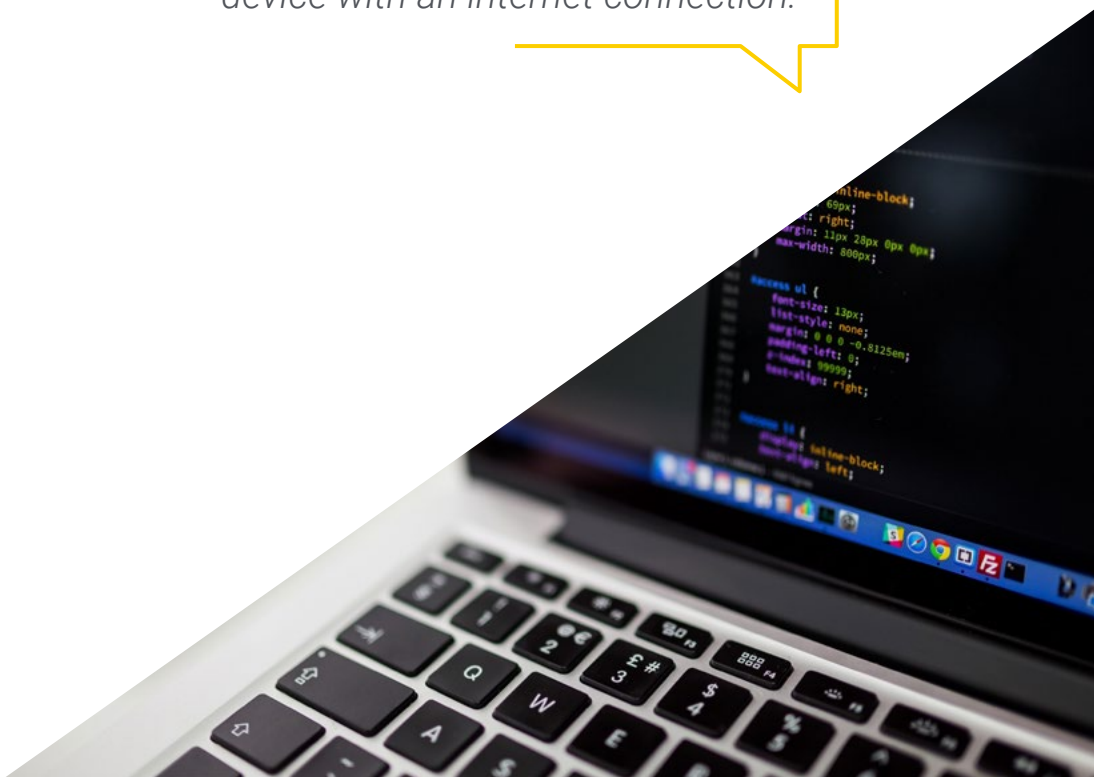
You will delve into the different types of communication used in current computing, as well as synchronization, name and domain services.

The virtual classroom will be available 24 hours a day, allowing you to download all the content from any fixed or mobile device with an internet connection.

The program includes, in its teaching staff, professionals from the industry who contribute their work experience to this training, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow professionals to learn in a contextual and situated learning environment, i.e., a simulated environment that will provide immersive training that is programmed to prepare the students for real situations.

The design of this program focuses on Problem-Based Learning, through which professionals will be challenged to solve different real-world professional practice situations throughout the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Objectives

Given the importance and significant evolution of communication and coordination in the field of computer science, this Postgraduate Program has been created with the aim of updating professionals on the latest developments in this area. Therefore, computer professionals will receive a comprehensive update in everything related to communication in parallel computing. This includes the analysis of multicast, stream-oriented communication, and message-oriented communication.

Upon completion of this Postgraduate Program, your goals for professional advancement will be within closer reach"

General Objectives

- Analyze what happens between the different components of Parallel and Distributed Computing
- Measure and compare their efficiency to analyze the performance of the set of components used
- Conduct a thorough analysis of multi-platform parallel computing to leverage task-level parallelism across different hardware accelerators
- Analyze in detail current software and architectures
- Develop in depth the relevant aspects of Parallel and Distributed Computing
- Specialize the students in the application of Parallel and Distributed Computing across various industry sectors

Specific Objectives

- Analyze the different architectures and models of distributed systems
- Determine the characteristics of parallel and distributed systems
- Examine in detail the diverse communication mechanisms that take place at the process level
- Conduct a comprehensive examination of remote, flow-oriented, message-oriented, and multicast communications, including recent examples and relevant considerations
- Establish the merging types of communication by analyzing their strengths and limitations
- Develop the processes to be followed in the selection of algorithms to be applied for name service, clock synchronization, coordination, and agreement between the elements of the system
- Compile scenarios using different types of communication technologies that improve performance and scalability

Add a distinctive certificate to your resume that demonstrates your willingness to continue improving and growing in the computer science's field"

03

Course Management

TECH has assembled a highly skilled team with expertise in the field of communication and coordination in computing systems to develop all the content for this certificate. This action is made in order to provide the students not only with updated and relevant theoretical content but also content that is adapted to the reality of the current market. Thanks to this, students will be able to incorporate the knowledge they have acquired into their daily practice even before completing the program.

You will receive the best theoretical content in the communication and coordination's field from renowned professionals which are experts in computer science"

Management

D. Olalla Bonal, Martín

- Senior Blockchain Practice Manager at EY
- Blockchain Client Technical Specialist for IBM
- Director of Architecture for Blocknitive
- Non-Relational Distributed Databases Team Coordinator for wedoIT (IBM Subsidiary)
- Infrastructure Architect at Bankia
- Head of Layout Department at T-Systems
- Department Coordinator for Bing Data Spain S.L

Professors

Dr. Almendras Aruzamen, Luis Fernando

- Date Engineer and Business Intelligence. Grupo Solutio, Madrid
- Data engineer at Indizen
- Data and business intelligence engineer at technology and people
- Database, big data and business intelligence support engineer at Equinix
- Data Engineer. Jalasoft
- Product Manager and responsible for the business analytics area at Goja
- Business Intelligence Sub-Manager. VIVA Nuevatel PC's
- Responsible for the datrawarehouse and big data area at Viva
- Software Development Leader at Intersoft
- Degree in Computer Science from the Mayor University of San Simon
- PhD PhD in Computer Engineering. Complutense University of Madrid
- Master's Degree in Computer Engineering from the Complutense University of Madrid
- Master's Degree in Information Systems and Technology Management from the Mayor University of San Simon
- International instructor. Oracle Database Proydesa - Oracle, Argentina
- Project Management Professional Certification Scoping Consultancy, Chile

04

Structure and Content

In order to facilitate the students' studying process, TECH and the teaching staff of this program have taken special care in the writing and presentation of all the content. With a clear and precise approach, the content is organized in a comfortable division by topics, greatly assisting students in the process of consulting and resolving concerns. The educational material even becomes a great ally after completing the program, serving as a high-quality reference material.

Thanks to TECH's advanced pedagogical and educational methodology, you won't have to invest large amounts of study hours to complete this certification"

Module 1. Communication and Coordination in Computing Systems

1.1. Parallel and Distributed Computing Processes
- 1.1.1. Parallel and Distributed Computing Processes
- 1.1.2. Processes and Threads
- 1.1.3. Virtualisation
- 1.1.4. Clients and Servers

1.2. Parallel Computing Communication
- 1.2.1. Parallel Computing
- 1.2.2. Layered Protocols
- 1.2.3. Communication in Parallel Computing. Typology

1.3. Remote Procedure Calling
- 1.3.1. Functioning of RPC (Remote Procedure Call)
- 1.3.2. Parameter Passing
- 1.3.3. Asynchronous RPC
- 1.3.4. Remote Procedure. Examples:

1.4. Message-Oriented Communication
- 1.4.1. Transient Message-Oriented Communication
- 1.4.2. Persistent Message-Oriented Communication
- 1.4.3. Message-Oriented Communication. Examples:

1.5. Flow-Oriented Communication
- 1.5.1. Support for Continuous Media
- 1.5.2. Flows and Quality of Service
- 1.5.3. Flow Synchronization
- 1.5.4. Flow-Oriented Communication. Examples:

1.6. Multicast Communication
- 1.6.1. Multicast at Application Level
- 1.6.2. Rumor-Based Data Broadcasting
- 1.6.3. Multicast Communication. Examples:

1.7. Other Types of Communication
- 1.7.1. Remote Method Invocation
- 1.7.2. Web Services / SOA / REST
- 1.7.3. Event Notification
- 1.7.4. Mobile Agents

1.8. Name Service
- 1.8.1. Name Services in Computing
- 1.8.2. Name Services and Domain Name System
- 1.8.3. Directory Services

1.9. Synchronization
- 1.9.1. Clock Synchronization
- 1.9.2. Logical Clocks, Mutual Exclusion and Global Positioning of Nodes
- 1.9.3. Choice of Algorithms

1.10. Communication Coordination and Agreement
- 1.10.1. Coordination and Agreement
- 1.10.2. Coordination and Agreement Consensus and Problems
- 1.10.3. Communication and Coordination. Currently

Immerse yourself in the key aspects of this university program through all the supplementary material provided, including readings, exercises, and real-life practical cases"

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"

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

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

> *Our program prepares you to face new challenges in uncertain environments and achieve success in your career"*

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

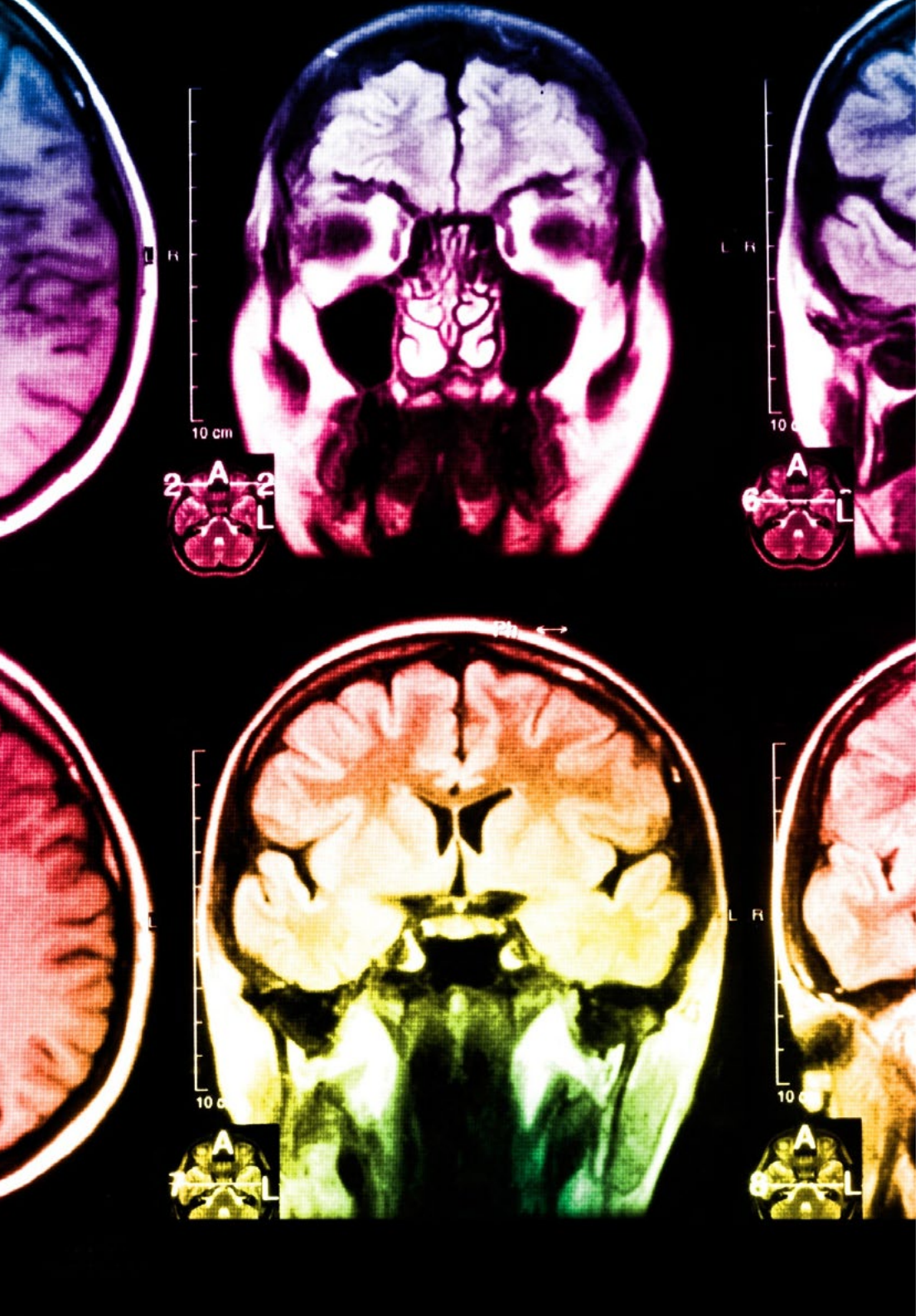
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

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

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

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

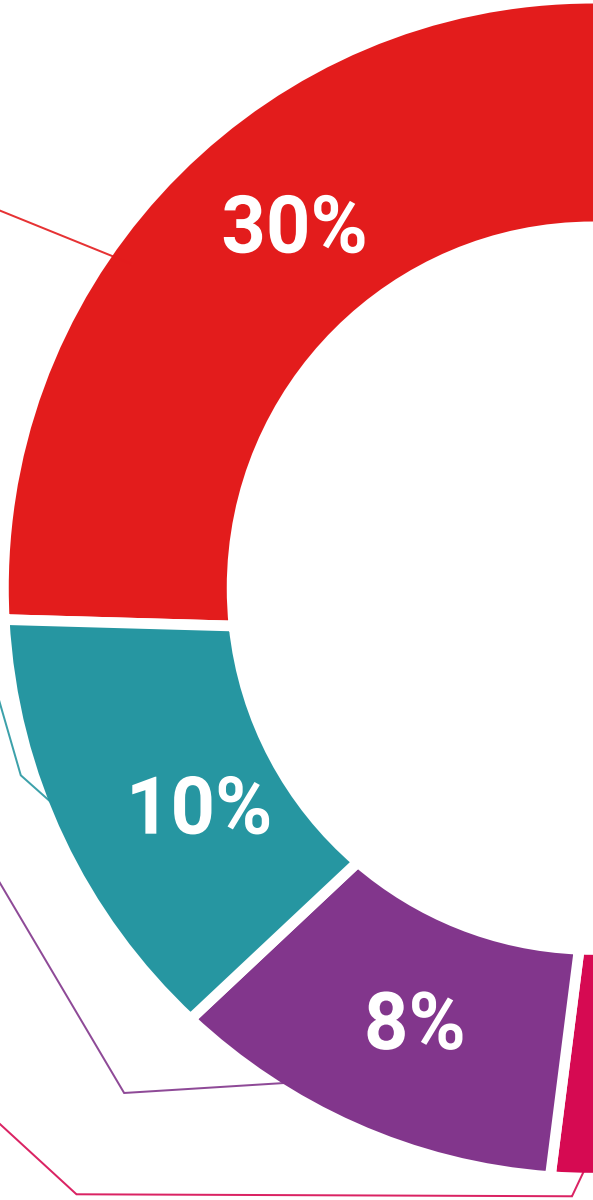
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

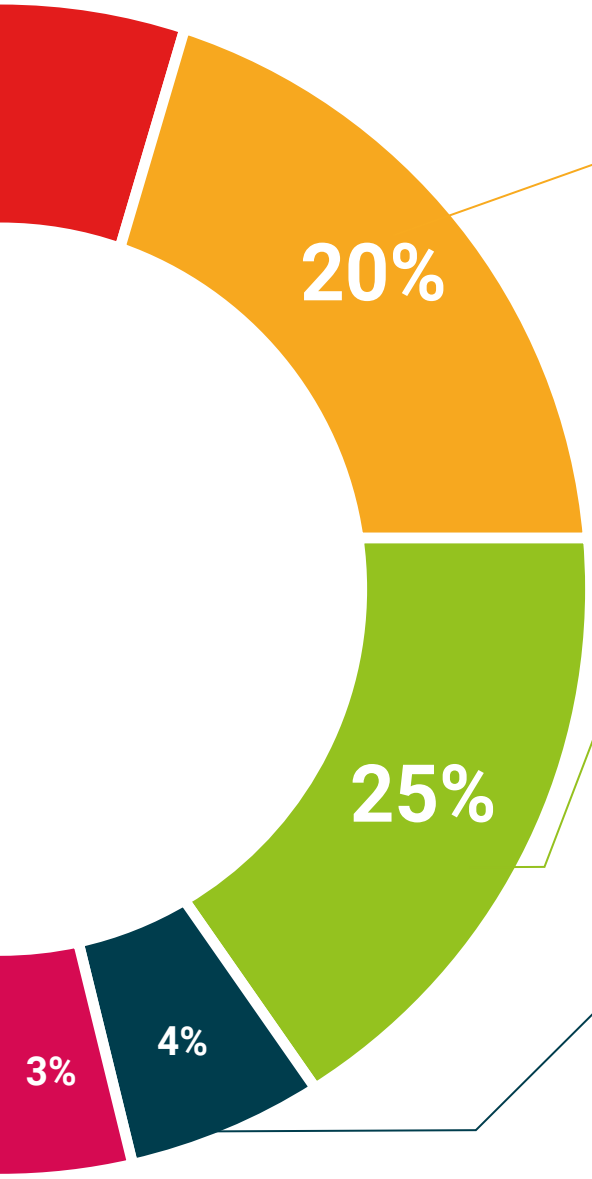
Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

06

Certificate

The Postgraduate Certificate in Communication and Coordination in Computing Systems guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

By successfully completing this program, you can obtain your certificate and without the need for travel or dealing with cumbersome paperwork"

This **Postgraduate Certificate in Communication and Coordination of Computing Systems** 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 certificate 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 Communication and Coordination of Computing Systems**

Official Nº of Hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Communication and Coordination of Computing Systems

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 certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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