Professional Master's Degree
Systems Computing

Accreditation/Membership

Association
for Computing
Machinery

tech global university

tech global university

Professional Master's Degree
Systems Computing

- Modality: **Online**
- Duration: **12 months.**
- Certificate: **TECH Global University**
- Accreditation: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

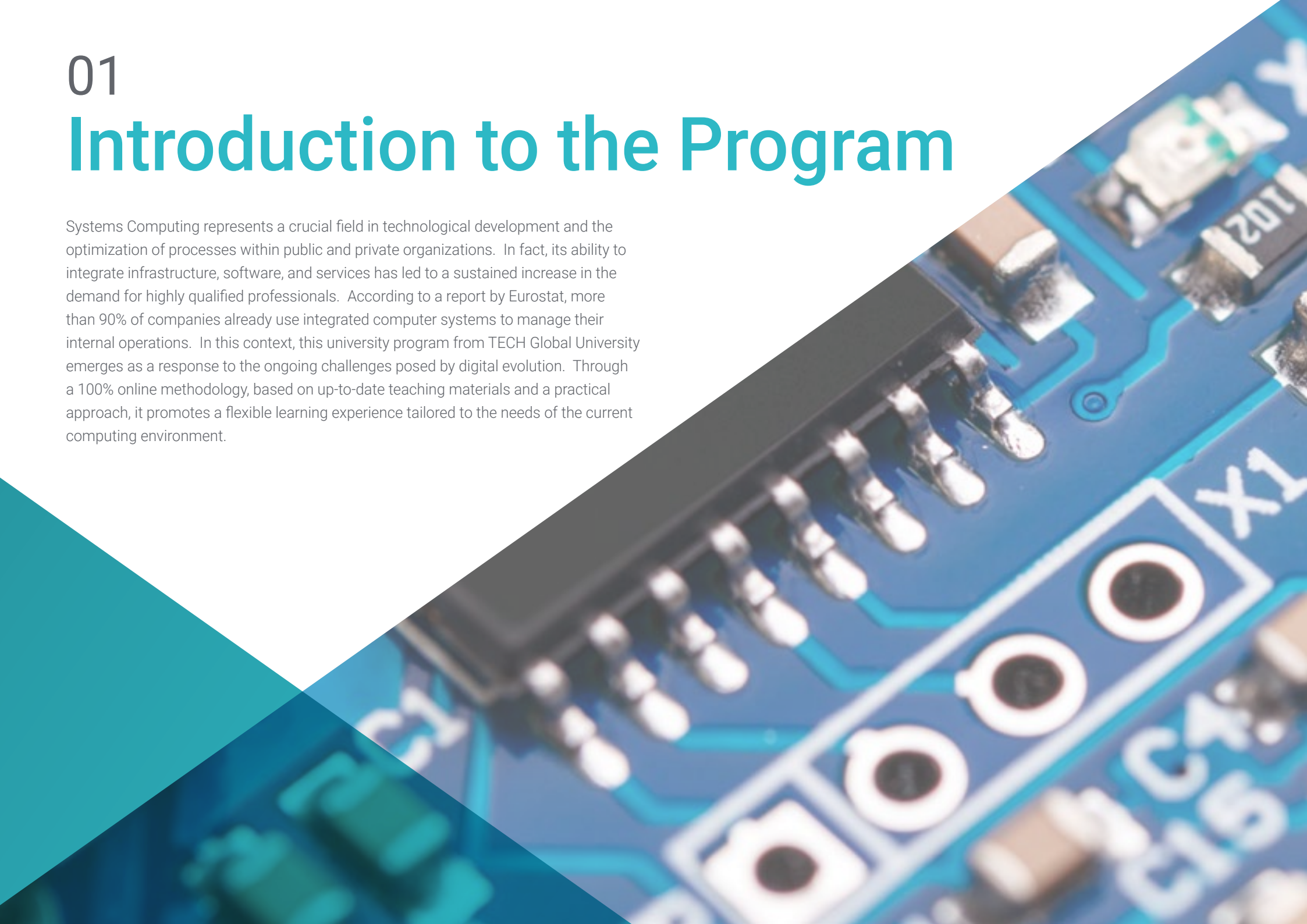
Website: www.techtitute.com/us/information-technology/professional-master-degree/master-systems-computing

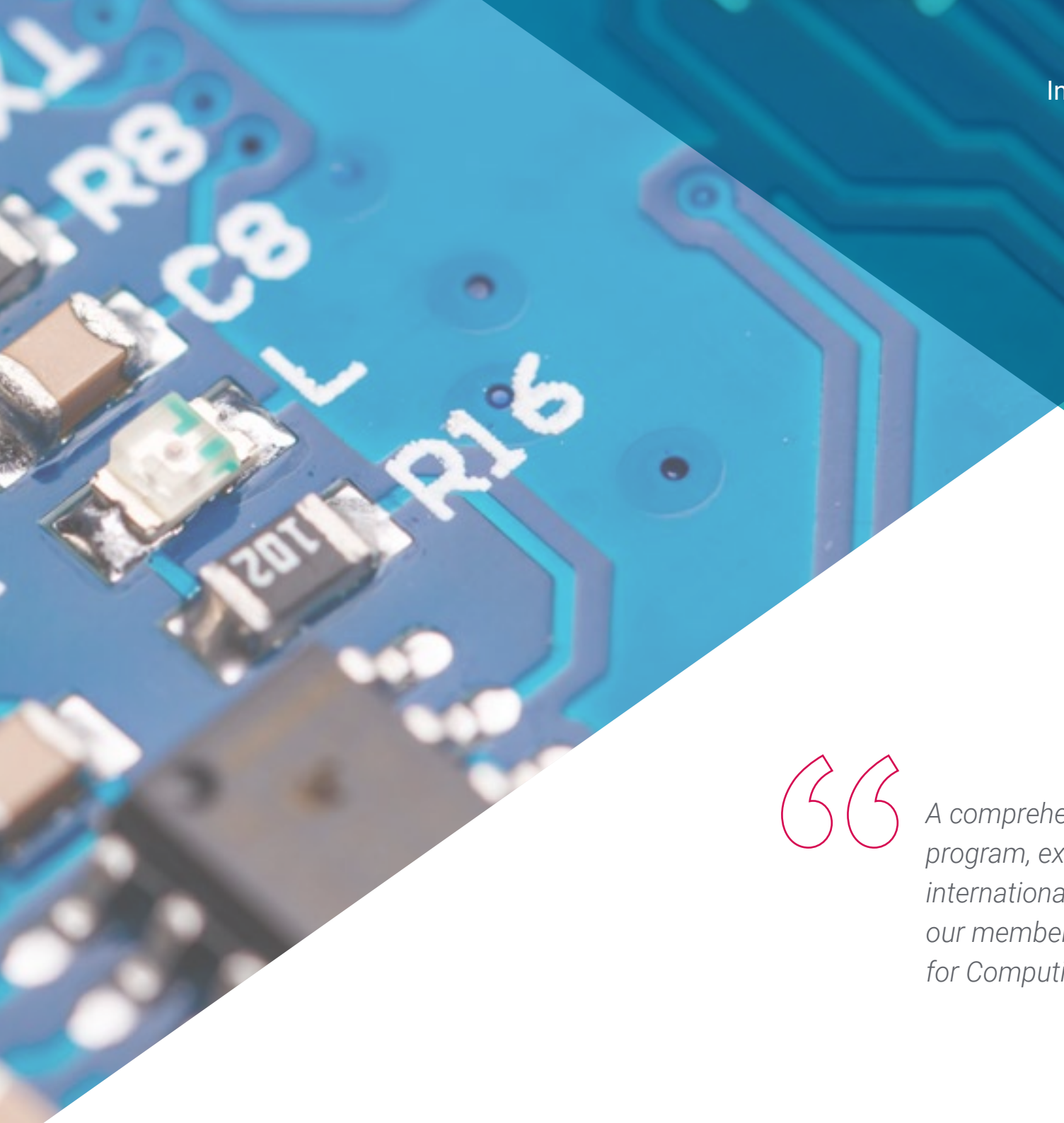
Index

01

Introduction to the Program

Systems Computing represents a crucial field in technological development and the optimization of processes within public and private organizations. In fact, its ability to integrate infrastructure, software, and services has led to a sustained increase in the demand for highly qualified professionals. According to a report by Eurostat, more than 90% of companies already use integrated computer systems to manage their internal operations. In this context, this university program from TECH Global University emerges as a response to the ongoing challenges posed by digital evolution. Through a 100% online methodology, based on up-to-date teaching materials and a practical approach, it promotes a flexible learning experience tailored to the needs of the current computing environment.





A comprehensive and 100% online program, exclusive to TECH, with an international perspective supported by our membership with the Association for Computing Machinery"

In the current context, technological development demands agile, efficient, and scalable solutions that seamlessly integrate hardware and software. In this scenario, Systems Computing becomes particularly relevant as it enables the management of complex infrastructures, optimization of computational resources, and support for critical processes in diverse sectors such as healthcare, education, industry, and security. Thanks to its applications, it is possible to ensure stable, secure, and adaptable digital environments to meet the changing needs of the professional and corporate world.

In response to these demands, this syllabus will delve into essential aspects such as the physical fundamentals behind Systems Computing, providing a solid foundation to understand the logic behind the functioning of computational systems. Additionally, computer technology and operating systems will be rigorously addressed, as they are fundamental pillars for the design, implementation, and maintenance of advanced technological solutions. This comprehensive approach will not only help understand how devices work but will also explore their evolution and projection in the professional field.

Through this university program, we will promote the development of skills oriented toward the efficient management and administration of complex computing systems. Furthermore, analytical, technical, and strategic skills will be enhanced, enabling students to tackle technological challenges from a critical and innovative perspective. The adopted approach allows professionals in the field to act confidently in highly demanding environments, generating value from a deep understanding of hardware, software, and their interconnection.

On the other hand, TECH's methodology makes the learning process a completely flexible experience, tailored to each individual's pace. In fact, permanent access to content, available every day of the year and from any device with an internet connection, allows progress without time or geographical restrictions. Additionally, the Relearning method, a cutting-edge pedagogical strategy, supports knowledge consolidation.

Furthermore, thanks to TECH's membership in the **Association for Computing Machinery (ACM)**, students will have access to exclusive and up-to-date resources, such as scientific publications, specialized courses, and international conferences. Additionally, they will have the opportunity to expand their network by connecting with experts in technology, artificial intelligence, data science, and other key disciplines in the sector.

This **Professional Master's Degree in Systems Computing** contains the most complete and up-to-date university program on the market. Its most notable features are:

- The development of practical cases presented by experts in Systems Computing
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Special emphasis on innovative methodologies in technological development
- 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 enhance your competencies in managing and optimizing computing systems in advanced professional environments"

You will gain a comprehensive understanding of how operating systems can be configured and managed to improve the stability of computing environments"

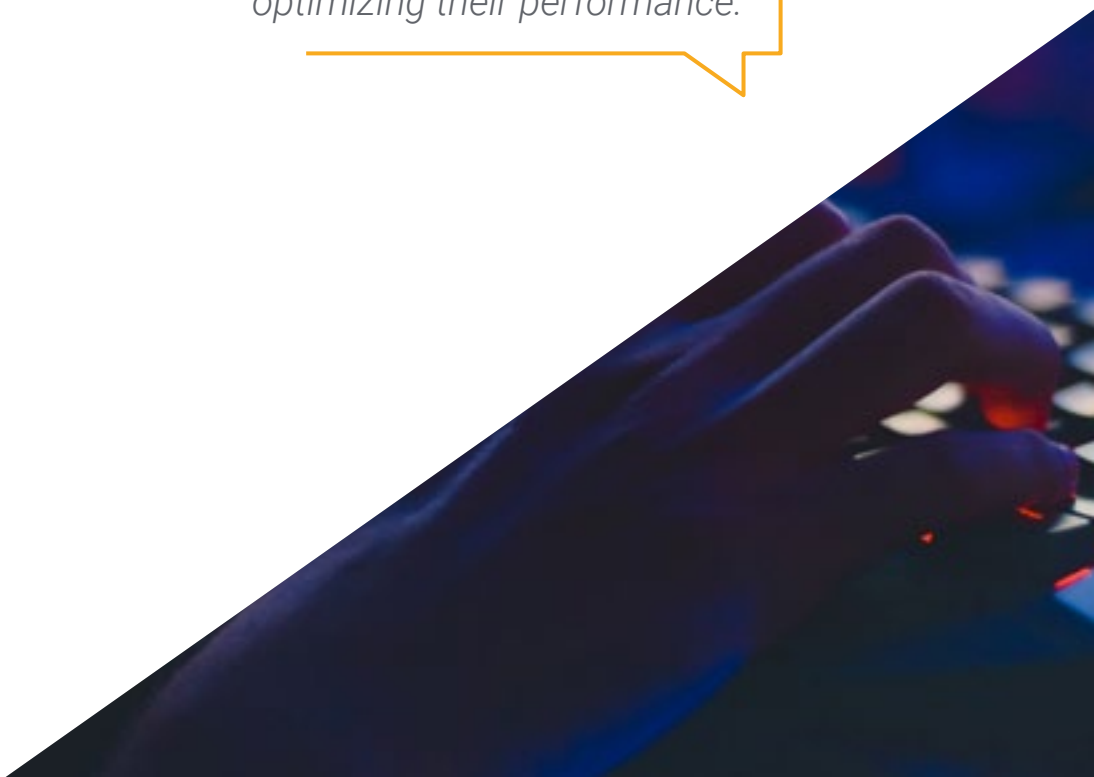
You will explore the physical fundamentals that support Systems Computing, understanding its theoretical and practical foundation.

You will refine your competencies in the functioning of computational systems, optimizing their performance.

The program includes faculty members from the field of Systems Computing, who bring their work experience to this program, along with 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 an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.

Study at the largest online university in the world and ensure your professional success. The future begins at TECH"

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.

The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.

Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.

The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.

03

Syllabus

The university pathway that exclusively complements this program will offer professionals a technical and up-to-date approach that will enhance essential competencies to tackle the challenges of the digital environment. In fact, from the efficient management of computer networks to the practical application of emerging technologies, a deep understanding of interconnected systems and their impact on various sectors will be fostered. Additionally, the ability to implement security mechanisms in information systems will be strengthened, a key aspect for safeguarding sensitive data in demanding professional contexts.

You will manage robust, scalable, and secure technological infrastructures in a variety of business environments"

Module 1. Physical Fundamentals of Computing

1.1. Fundamental Forces
- 1.1.1. Newton's Second Law
- 1.1.2. The Fundamental Forces of Nature
- 1.1.3. Gravitational Force
- 1.1.4. The Electric Force

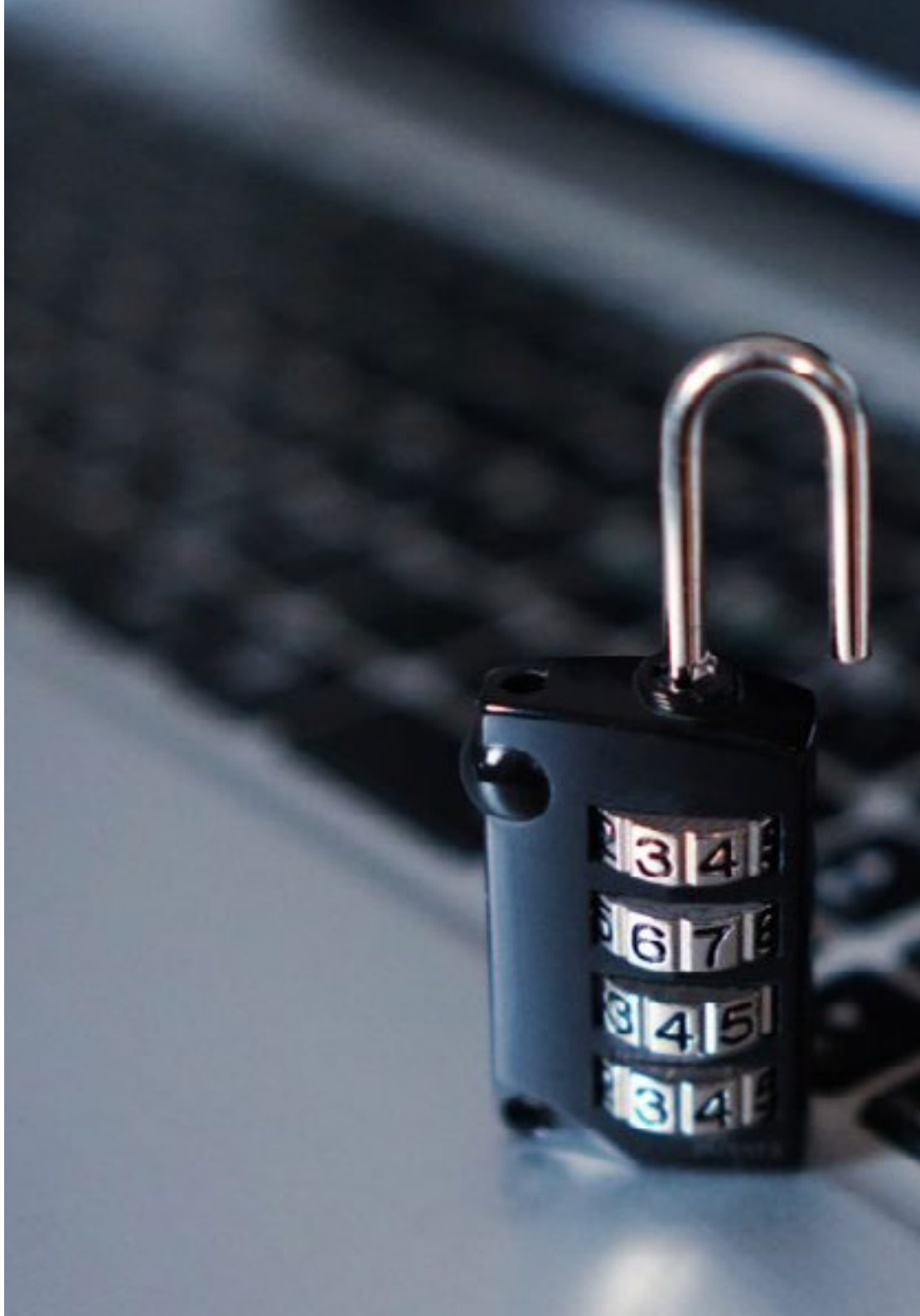
1.2. Conservation Laws
- 1.2.1. What is Mass?
- 1.2.2. The Electric Charge
- 1.2.3. The Millikan Experiment
- 1.2.4. Conservation of Linear Momentum

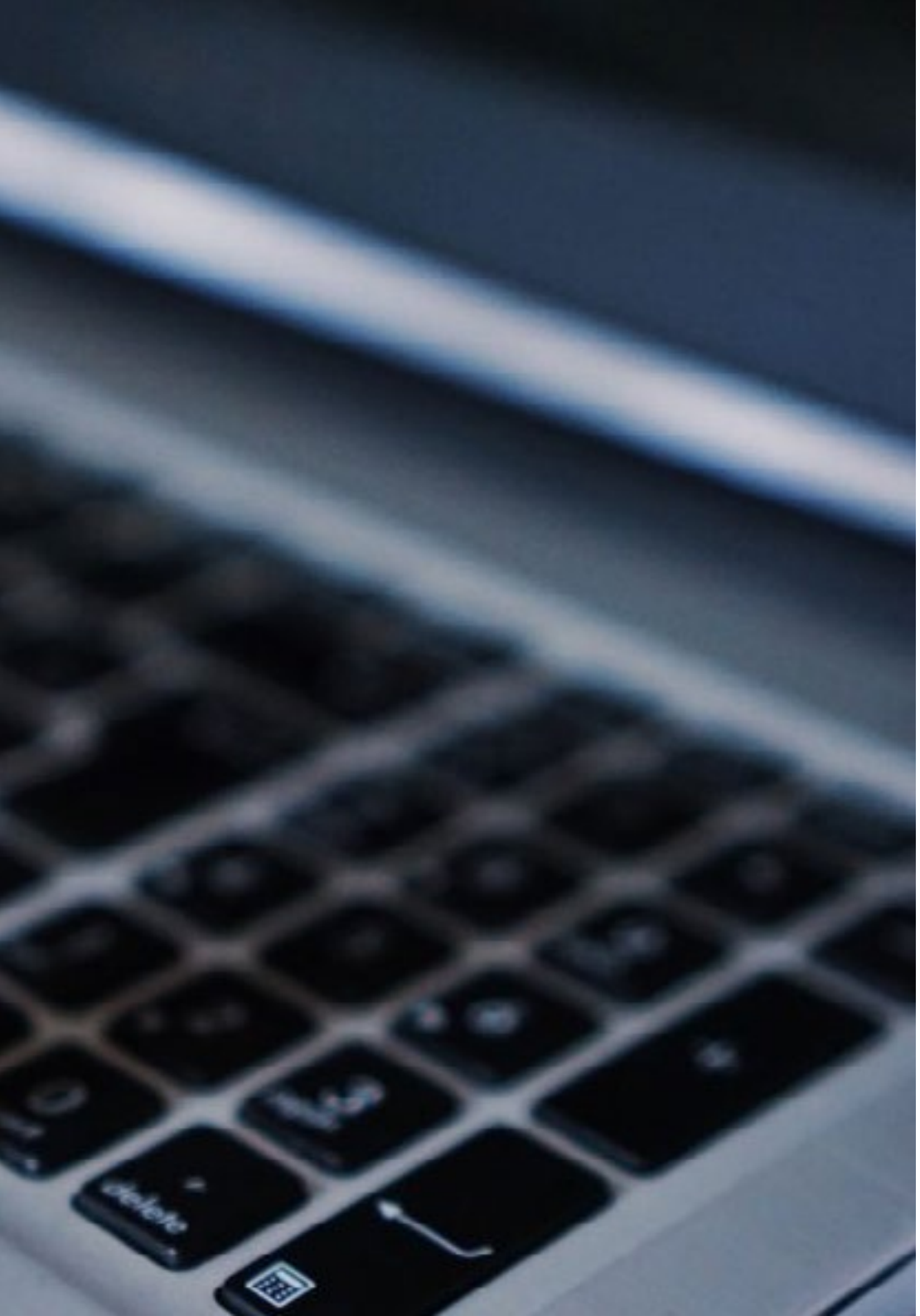
1.3. Energy
- 1.3.1. What is Energy?
- 1.3.2. Measuring Energy
- 1.3.3. Energy Types
- 1.3.4. Dependence on the Observer's Energy
- 1.3.5. Potential Energy
- 1.3.6. Derivation of Potential Energy
- 1.3.7. Energy Conservation
- 1.3.8. Energy Units

1.4. Electric Field
- 1.4.1. Static Electricity
- 1.4.2. Electric Field
- 1.4.3. Capacity
- 1.4.4. Potential

1.5. Electrical Circuits
- 1.5.1. Circulation of Electric Charge
- 1.5.2. Batteries
- 1.5.3. Alternating Current

1.6. Magnetism
- 1.6.1. Introduction and Magnetic Materials
- 1.6.2. Magnetic Field
- 1.6.3. Electromagnetic Introduction





1.7. Electromagnetic Spectrum
- 1.7.1. Maxwell's Equations
- 1.7.2. Optics and Electromagnetic Waves
- 1.7.3. The Michelson and Morley Experiment

1.8. The Atom and Subatomic Particles
- 1.8.1. The Atom
- 1.8.2. The Atomic Nucleus
- 1.8.3. Radioactivity

1.9. Quantum Physics
- 1.9.1. Color and Heat
- 1.9.2. Photoelectric Effect
- 1.9.3. Matter Waves
- 1.9.4. Nature as Probability

1.10. Relativity
- 1.10.1. Gravity, Space and Time
- 1.10.2. Lorentz Transformations
- 1.10.3. Speed and Time
- 1.10.4. Energy, Momentum and Mass

Module 2. Computer Technology

2.1. General Information and a Brief History of Computers
- 2.1.1. Organization and Architecture
- 2.1.2. Brief History of Computers

2.2. Computer Arithmetic
- 2.2.1. The Arithmetic-Logic Unit
- 2.2.2. Numbering Systems
- 2.2.3. Integer Representation
- 2.2.4. Arithmetic with Integers
- 2.2.5. Floating Point Representation
- 2.2.6. Floating Point Arithmetic

2.3. Classic Concepts of Logic Design
- 2.3.1. Boolean Algebra
- 2.3.2. Logic Gates
- 2.3.3. Logical Simplification
- 2.3.4. Combinational Circuits
- 2.3.5. Sequential Circuits
- 2.3.6. Concept of Sequential Machine
- 2.3.7. Memory Element
- 2.3.8. Types of Memory Elements
- 2.3.9. Synthesis of Sequential Circuits
- 2.3.10 Synthesis of Sequential Circuits with PLA

2.4. Basic Computer Organization and Operation
- 2.4.1. Introduction
- 2.4.2. Components of a Computer
- 2.4.3. Operation of a Computer
- 2.4.4. Interconnection Structures
- 2.4.5. Interconnection with Buses
- 2.4.6. PCI Bus

2.5. Internal Memory
- 2.5.1. Introduction to Memory Systems in Computers
- 2.5.2. Semiconductor Main Memory
- 2.5.3. Correction of Errors
- 2.5.4. Advanced DRAM Memory Organization

2.6. Input/Output
- 2.6.1. External Devices
- 2.6.2. Input/Output Modules
- 2.6.3. Scheduled Input/Output
- 2.6.4. Input/Output via Interrupts
- 2.6.5. Direct Memory Access
- 2.6.6. Input/Output Channels and Processors

2.7. Machine Instructions: Features and Functions
- 2.7.1. Characteristics of Machine Instructions
- 2.7.2. Types of Operands
- 2.7.3. Types of Transactions
- 2.7.4. Assembly Language
- 2.7.5. Address
- 2.7.6. Formats of Instructions

2.8. Processor Structure and Operation
- 2.8.1. Processor Organization
- 2.8.2. Record Organization
- 2.8.3. Training Cycle
- 2.8.4. Instruction Segmentation

2.9. Cache Memory and External Memory
- 2.9.1. Basic Principles of Cache Memories
- 2.9.2. Cache Memory Design Elements
- 2.9.3. Magnetic Disks
- 2.9.4. RAID
- 2.9.5. Optical Memory
- 2.9.6. Magnetic Tape

2.10. Introduction to the Operation of the Control Unit
- 2.10.1. Microoperations
- 2.10.2. Processor Control
- 2.10.3. Wired Implementation

Module 3. Computer Structure

3.1. Fundamentals of Computer Design and Evolution
- 3.1.1. Definition of Computer Architecture
- 3.1.2. Evolution and Performance of Architectures
- 3.1.3. Parallel Architectures and Levels of Parallelism

3.2. Computer Performance Evaluation
- 3.2.1. Performance Measures
- 3.2.2. Test Programs (Benchmarks)
- 3.2.3. Improved Performance
- 3.2.4. Costs of a Computer

3.3. Leveraging the Memory Hierarchy
- 3.3.1. Memory Hierarchy
- 3.3.2. Basic Concepts of the Cache
- 3.3.3. Cache Evaluation and Improvements
- 3.3.4. Virtual Memory

3.4. Storage and Other Input/Output Aspects
- 3.4.1. Reliability, Dependability and Availability
- 3.4.2. Disk Storage
- 3.4.3. Flash Storage
- 3.4.4. Connection and Information Transfer Systems

3.5. Segmented Processors
- 3.5.1. What are Segmented Processors?
- 3.5.2. Principles of Segmentation and Performance Enhancement
- 3.5.3. Segmented Processor Design
- 3.5.4. Optimization of Functional Channels
- 3.5.5. Interrupt Handling on a Segmented Processor

3.6. Superscalar Processors
- 3.6.1. What are Superscalar Processors?
- 3.6.2. Parallelism between Instructions and Machine Parallelism
- 3.6.3. Superscalar Instruction Processing
- 3.6.4. Jump Instruction Processing
- 3.6.5. Interrupt Handling on a Superscalar Processor

3.7. VLIW Processors
- 3.7.1. What are VLIW Processors?
- 3.7.2. Exploiting Parallelism in VLIW Architectures
- 3.7.3. Compiler Support Resources

3.8. Vector Processors
- 3.8.1. What are Vector Processors?
- 3.8.2. Vector Architecture
- 3.8.3. The Memory System in Vector Processors
- 3.8.4. Performance Measurements on Vector Processors
- 3.8.5. Vector Processing Efficiency

3.9. Parallel Computers
- 3.9.1. Parallel Architectures and Levels of Parallelism
- 3.9.2. Motivation to the Study of Parallel Computers
- 3.9.3. Design Space. Classification and General Structure
- 3.9.4. Performance on Parallel Computers
- 3.9.5. Classification of Communication Systems in Parallel Computers
- 3.9.6. General Structure of the Communication System in Parallel Computers
- 3.9.7. The Network Interface in Parallel Computers
- 3.9.8. The Interconnection Network in Parallel Computers
- 3.9.9. Communication System Performance on Parallel Computers

3.10. Interconnection Networks and Multiprocessors
- 3.10.1. Topology and Types of Interconnection Networks
- 3.10.2. Switching in Interconnection Networks
- 3.10.3. Flow Control in Interconnection Networks
- 3.10.4. Routing in Interconnection Networks
- 3.10.5. Memory System Coherence on Multiprocessors
- 3.10.6. Multiprocessor Memory Consistency
- 3.10.7. Multiprocessor Synchronization

Module 4. Operating Systems

4.1. Introduction to Operating Systems
- 4.1.1. Concept
- 4.1.2. Historical Recap
- 4.1.3. Fundamental Building Blocks of Operating Systems
- 4.1.4. Objectives and Functions of Operating Systems

4.2. Structure of Operating Systems
- 4.2.1. Operating System Services
- 4.2.2. Operating System User Interface
- 4.2.3. System Calls
- 4.2.4. Types of System Calls

4.3. Process Planning
- 4.3.1. Basic Concepts
- 4.3.2. Planning Criteria
- 4.3.3. Planning Algorithms

4.4. Processes and Threads
- 4.4.1. Process Concept
- 4.4.2. Thread Concept
- 4.4.3. Process Status
- 4.4.4. Process Control

4.5. Concurrence. Mutual Exclusion, Synchronization, and Interlocking
- 4.5.1. Principles of Concurrence
- 4.5.2. Mutual Exclusion
- 4.5.3. Traffic Lights
- 4.5.4. Monitors
- 4.5.5. Message Passing
- 4.5.6. Fundamentals of Interlocking
- 4.5.7. Interlock Prevention
- 4.5.8. Interlock Avoidance
- 4.5.9. Interlock Detection and Recovery

4.6. Memory Management
- 4.6.1. Memory Management Requirements
- 4.6.2. Process Memory Model
- 4.6.3. Contiguous Assignment Scheme
- 4.6.4. Segmentation
- 4.6.5. Pagination
- 4.6.6. Segmented Pagination

4.7. Virtual Memory
- 4.7.1. Virtual Memory Fundamentals
- 4.7.2. Life Cycle of a Page
- 4.7.3. Virtual Memory Management Policy
- 4.7.4. Localization Policy
- 4.7.5. Extraction Policy
- 4.7.6. Replacement Policy

4.8. Input/Output System
- 4.8.1. Input/Output Devices
- 4.8.2. Input/Output System Organization
- 4.8.3. Use of Buffers
- 4.8.4. Magnetic Disk

4.9. File System Interface and Implementation
- 4.9.1. Archiving Concept
- 4.9.2. Access Methods
- 4.9.3. Directory Structure
- 4.9.4. Structure of a File System
- 4.9.5. File System Interface and Implementation
- 4.9.6. Directories System Interface and Implementation
- 4.9.7. Allocation Methods
- 4.9.8. Management of Free Space

4.10. Protection
- 4.10.1. Objectives
- 4.10.2. Authentication
- 4.10.3. Authorization
- 4.10.4. Cryptography

Module 5. Advanced Operating Systems

5.1. Concept of System Operations
- 5.1.1. Operating System Functions
- 5.1.2. Process Management
- 5.1.3. Memory Management
- 5.1.4. Directory and File Management
- 5.1.5. The Shell: Interactivity
- 5.1.6. Security
- 5.1.7. Design Objectives

5.2. History of Operating Systems
- 5.2.1. First Generation
- 5.2.2. Second Generation
- 5.2.3. Third Generation
- 5.2.4. Fourth Generation
- 5.2.5. The OS/2 Case
- 5.2.6. The History of GNU/Linux
- 5.2.7. The History of Windows

5.3. Structure of an Operating System
- 5.3.1. Monolithic Systems
- 5.3.2. Layered Systems
- 5.3.3. Virtualization
- 5.3.4. Exokernel
- 5.3.5. Client-Server Model
- 5.3.6. Distributed Systems

5.4. System Calls
- 5.4.1. System Calls. Concepts
- 5.4.2. System Calls for Process Management
- 5.4.3. System Calls for File and Directory Administration
- 5.4.4. Calls to the Communication System

5.5. Windows and GNU/Linux
- 5.5.1. Windows Structure
- 5.5.2. Structure of GNU/Linux

5.6. The GNU/Linux Shell and PowerShell
- 5.6.1. The Command Interpreter
- 5.6.2. Using the Command Interpreter
- 5.6.3. GNU/Linux Commands
- 5.6.4. Basic PowerShell Syntax
- 5.6.5. Basic PowerShell Commands

5.7. Shell Programming
- 5.7.1. Scripts Programming
- 5.7.2. Syntax

5.8. System Programming in GNU/Linux
- 5.8.1. C Language under UNIX
- 5.8.2. Compilation Tools
- 5.8.3. Error Handling

5.9. System Calls on Files
- 5.9.1. Basic Calls
- 5.9.2. Calls on Directories
- 5.9.3. Advanced Calls

5.10. System Calls on Processes
- 5.10.1. Basic Calls
- 5.10.2. Signals
- 5.10.3. Pipelines

Module 6. Free Software and Open Knowledge

6.1. Introduction to Free Software
- 6.1.1. History of Free Software
- 6.1.2. "Freedom" in Software
- 6.1.3. Licenses for the Use of Software Tools
- 6.1.4. Intellectual Property of Software
- 6.1.5. What is the Motivation for Using Free Software?
- 6.1.6. Free Software Myths
- 6.1.7. Top500

6.2. Open Knowledge and CC Licenses
- 6.2.1. Basic Concepts
- 6.2.2. Creative Commons Licenses
- 6.2.3. Other Content Licenses
- 6.2.4. Wikipedia and Other Open Knowledge Projects

6.3. Main Free Software Tools
- 6.3.1. Operating Systems
- 6.3.2. Office Applications
- 6.3.3. Business Management Applications
- 6.3.4. Web Content Managers
- 6.3.5. Multimedia Content Creation Tools
- 6.3.6. Other Applications

6.4. The Company: Free Software and its Costs
- 6.4.1. Free Software: Yes or No?
- 6.4.2. Truths and Lies about Free Software
- 6.4.3. Business Software Based on Free Software
- 6.4.4. Software Costs
- 6.4.5. Free Software Models

6.5. The GNU/Linux Operating System
- 6.5.1. Architecture
- 6.5.2. Basic Directory Structure
- 6.5.3. File System Characteristics and Structure
- 6.5.4. Internal Representation of the Files

6.6. The Android Mobile Operating System
- 6.6.1. History
- 6.6.2. Architecture
- 6.6.3. Android Forks
- 6.6.4. Introduction to Android Development
- 6.6.5. Frameworks for Mobile Application Development

6.7. Website Creation with WordPress
- 6.7.1. WordPress Features and Structure
- 6.7.2. Creation of Sites on WordPress.com
- 6.7.3. Installation and Configuration of WordPress on Your Own Server
- 6.7.4. Installing Plugins and Expansion of WordPress
- 6.7.5. Creation of WordPress Plugins
- 6.7.6. WordPress Theme Creation

6.8. Free Software Trends
- 6.8.1. Cloud Environments
- 6.8.2. Monitoring Tools
- 6.8.3. Operating Systems
- 6.8.4. Big Data and Open Data2.0.
- 6.8.5. Quantum Computing

6.9. Version Control
- 6.9.1. Basic Concepts
- 6.9.2. Git
- 6.9.3. Cloud and Self-hosted Git Services
- 6.9.4. Other Version Control Systems

6.10. Custom GNU/Linux Distributions
- 6.10.1. Main Distributions
- 6.10.2. Distributions Derived from Debian
- 6.10.3. Deb Package Creation
- 6.10.4. Modification of the Distribution
- 6.10.5. ISO Image Generation

Module 7. Computer Networks

7.1. Computer Networks on the Internet
- 7.1.1. Networks and Internet
- 7.1.2. Protocol Architecture

7.2. The Application Layer
- 7.2.1. Model and Protocols
- 7.2.2. FTP and SMTP Services
- 7.2.3. DNS Service
- 7.2.4. HTTP Operation Model
- 7.2.5. HTTP Message Formats
- 7.2.6. Interaction with Advanced Methods

7.3. The Transport Layer
- 7.3.1. Communication Between Processes
- 7.3.2. Connection-Oriented Transportation: TCP and SCTP

7.4. The Network Layer
- 7.4.1. Circuit and Packet Switching
- 7.4.2. IP Protocol (v4 and v6)
- 7.4.3. Routing Algorithms

7.5. The Link Layer
- 7.5.1. Link Layer and Error Detection and Correction Techniques
- 7.5.2. Multiple Access Links and Protocols
- 7.5.3. Link Level Addressing

7.6. LAN Networks
- 7.6.1. Network Topologies
- 7.6.2. Network and Interconnection Elements

7.7. IP Addressing
- 7.7.1. IP Addressing and Subnetting
- 7.7.2. Overview: An HTTP Request

7.8. Wireless and Mobile Networks
- 7.8.1. 2G, 3G and 4G Mobile Networks and Services
- 7.8.2. 5G Networks

7.9. Network Security
- 7.9.1. Fundamentals of Communications Security
- 7.9.2. Access Control
- 7.9.3. System Security
- 7.9.4. Fundamentals of Cryptography
- 7.9.5. Digital Signature

7.10. Internet Security Protocols
- 7.10.1. IP Security and Virtual Private Networks (VPN)
- 7.10.2. Web Security with SSL/TLS

Module 8. Emerging Technologies

8.1. Mobile Technologies
- 8.1.1. Mobile Devices
- 8.1.2. Mobile Communications

8.2. Mobile Services
- 8.2.1. Types of Applications
- 8.2.2. Decision on the Type of Mobile Application
- 8.2.3. Mobile Interaction Design

8.3. Location-Based Services
- 8.3.1. Location-Based Services
- 8.3.2. Technologies for Mobile Localization
- 8.3.3. GNSS-based Localization
- 8.3.4. Accuracy and Accuracy in Localization Technologies
- 8.3.5. Beacons: Location by Proximity

8.4. User Experience (UX) Design
- 8.4.1. Introduction to User Experience (UX)
- 8.4.2. Technologies for Mobile Localization
- 8.4.3. Methodology for UX Design
- 8.4.4. Best Practices in the Prototyping Process

8.5. Extended Reality
- 8.5.1. Extended Reality Concepts
- 8.5.2. Technologies for Mobile Localization
- 8.5.3. AR and VR Application and Services

8.6. The Internet of Things (IoT) I
- 8.6.1. IoT Fundamentals
- 8.6.2. IoT Devices and Communications

8.7. The Internet of Things (IoT) II
- 8.7.1. Beyond Cloud Computing
- 8.7.2. Smart Cities
- 8.7.3. Digital Twins
- 8.7.4. IoT Projects

8.8. *Blockchain*
- 8.8.1. Blockchain Fundamentals
- 8.8.2. Blockchain-Based Applications and Services

8.9. Autonomous Driving
- 8.9.1. Technologies for Autonomous Driving
- 8.9.2. V2X Communications

8.10. Innovative Technology and Research
- 8.10.1. Fundamentals of Quantum Computing
- 8.10.2. Applications of Quantum Computing
- 8.10.3. Introduction to Research

Module 9. Information Systems Security

9.1. A Global Perspective on Security, Cryptography and Classical Cryptanalysis
- 9.1.1. Computer Security: Historical Perspective
- 9.1.2. But what exactly is meant by Security?
- 9.1.3. History of Cryptography
- 9.1.4. Substitution Ciphers
- 9.1.5. Case Study: The Enigma Machine

9.2. Symmetric Cryptography
- 9.2.1. Introduction and Basic Terminology.
- 9.2.2. Symmetric Encryption
- 9.2.3. Modes of Operation
- 9.2.4. DES
- 9.2.5. The New AES Standard
- 9.2.6. Encryption in Flow
- 9.2.7. Cryptanalysis

9.3. Asymmetric Cryptography
- 9.3.1. Origins of Public Key Cryptography
- 9.3.2. Basic Concepts and Operation
- 9.3.3. The RSA Algorithm
- 9.3.4. Digital Certificates
- 9.3.5. Key Storage and Management

9.4. Network Attacks
- 9.4.1. Network Threats and Attacks
- 9.4.2. Enumeration
- 9.4.3. Traffic Interception: *Sniffers*
- 9.4.4. Denial of Service Attacks
- 9.4.5. ARP Poisoning Attacks

9.5. Security Architectures
- 9.5.1. Traditional Security Architectures
- 9.5.2. Secure Socket Layer: SSL
- 9.5.3. SSH Protocol
- 9.5.4. Virtual Private Networks (VPN)
- 9.5.5. External Storage Unit Protection Mechanisms
- 9.5.6. Hardware Protection Mechanisms

9.6. System Protection Techniques and Secure Code Development
- 9.6.1. Operational Safety
- 9.6.2. Resources and Controls
- 9.6.3. Monitoring
- 9.6.4. Intrusion Detection Systems
- 9.6.5. Host IDS
- 9.6.6. Network IDS
- 9.6.7. Signature-Based IDS
- 9.6.8. Lure Systems
- 9.6.9. Basic Security Principles in Code Development
- 9.6.10. Failure Management
- 9.6.11. Public Enemy Number 1: Buffer Overflows
- 9.6.12. Cryptographic Botches

9.7. Botnets and Spam
- 9.7.1. Origin of the Problem
- 9.7.2. Spam Process
- 9.7.3. Sending Spam
- 9.7.4. Refinement of Mailing Lists
- 9.7.5. Protection Techniques
- 9.7.6. Anti-Spam Service Offered by Third-Parties
- 9.7.7. Study Cases
- 9.7.8. Exotic Spam

9.8. Web Auditing and Attacks
- 9.8.1. Information Gathering
- 9.8.2. Attack Techniques
- 9.8.3. Tools

9.9. Malware and Malicious Code
- 9.9.1. What is Malware?
- 9.9.2. Types of Malware
- 9.9.3. Virus
- 9.9.4. Criptovirus
- 9.9.5. Worms
- 9.9.6. *Adware*
- 9.9.7. *Spyware*
- 9.9.8. *Hoaxes*
- 9.9.9. *Phishing*
- 9.9.10. Trojans
- 9.9.11. The Economy of *Malware*
- 9.9.12. Possible Solutions

9.10. Forensic Analysis
- 9.10.1. Evidence Collection
- 9.10.2. Evidence Analysis
- 9.10.3. Anti-Forensic Techniques
- 9.10.4. Case Study

Module 10. Systems Integration

10.1. Introduction to Information Systems in the Enterprise
- 10.1.1. The Role of Information Systems
- 10.1.2. What is an Information System?
- 10.1.3. Dimensions of Information Systems
- 10.1.4. Business Processes and Information Systems
- 10.1.5. The IS/IT Department

10.2. Opportunities and Needs of Information Systems in the Enterprise
- 10.2.1. Organizations and Information Systems
- 10.2.2. Features of Organizations
- 10.2.3. Impact of Information Systems in the Enterprise
- 10.2.4. Information Systems to Achieve a Competitive Advantage
- 10.2.5. Use of Systems in the Administration and Management of the Enterprise

10.3. Basic Concepts of Information Systems and Technologies
- 10.3.1. Data, Information and Knowledge
- 10.3.2. Technology and Information Systems
- 10.3.3. Technology Components
- 10.3.4. Classification and Types of Information Systems
- 10.3.5. Service and Business Process Based Architectures
- 10.3.6. Forms of Systems Integration

10.4. Systems for the Integrated Enterprise Resource Planning
- 10.4.1. Business Needs
- 10.4.2. An Integrated Enterprise Resource Planning
- 10.4.3. Acquisition vs. Development
- 10.4.4. ERP Implementation
- 10.4.5. Implications for Management
- 10.4.6. Leading ERP Vendors

10.5. Supply Chain and Customer Relationship Management Information Systems
- 10.5.1. Definition of Supply Chain
- 10.5.2. Effective Supply Chain Management
- 10.5.3. The Role of Information Systems
- 10.5.4. Supply Chain Management Solutions
- 10.5.5. Customer Relationship Management
- 10.5.6. The Role of Information Systems
- 10.5.7. Implementation of a CRM System
- 10.5.8. Critical Success Factors in CRM Implementation
- 10.5.9. CRM, e-CRM and Other Trends

10.6. ICT Investment Decision-Making and Information Systems Planning
- 10.6.1. Criteria for ICT Investment Decisions
- 10.6.2. Linking the Project to the Management and Business Plan
- 10.6.3. Management Implications
- 10.6.4. Redesign of Business Processes
- 10.6.5. Management's Decision on Implementation Methodologies
- 10.6.6. Need for Information Systems Planning
- 10.6.7. Objectives, Participants and Moments
- 10.6.8. Structure and Development of the Systems Planning
- 10.6.9. Follow-Up and Updating

10.7. Security Considerations in the Use of ICTs
- 10.7.1. Risk Analysis
- 10.7.2. Security in Information Systems
- 10.7.3. Practical Tips

10.8. Feasibility of ICT Project Implementation and Financial Aspects in Information Systems Projects
- 10.8.1. Description and Objectives
- 10.8.2. EVS Participants
- 10.8.3. Techniques and Procedures
- 10.8.4. Cost Structure
- 10.8.5. Financial Projection
- 10.8.6. Budgets

10.9. *Business Intelligence*
- 10.9.1. What Is Business Intelligence?
- 10.9.2. BI Implementation Strategy
- 10.9.3. Present and Future in BI

10.10. ISO/IEC 12207
- 10.10.1. What is "ISO/IEC 12207"?
- 10.10.2. Analysis of Information Systems
- 10.10.3. Information System Design
- 10.10.4. Implementation and Acceptance of the Information System

04

Teaching Objectives

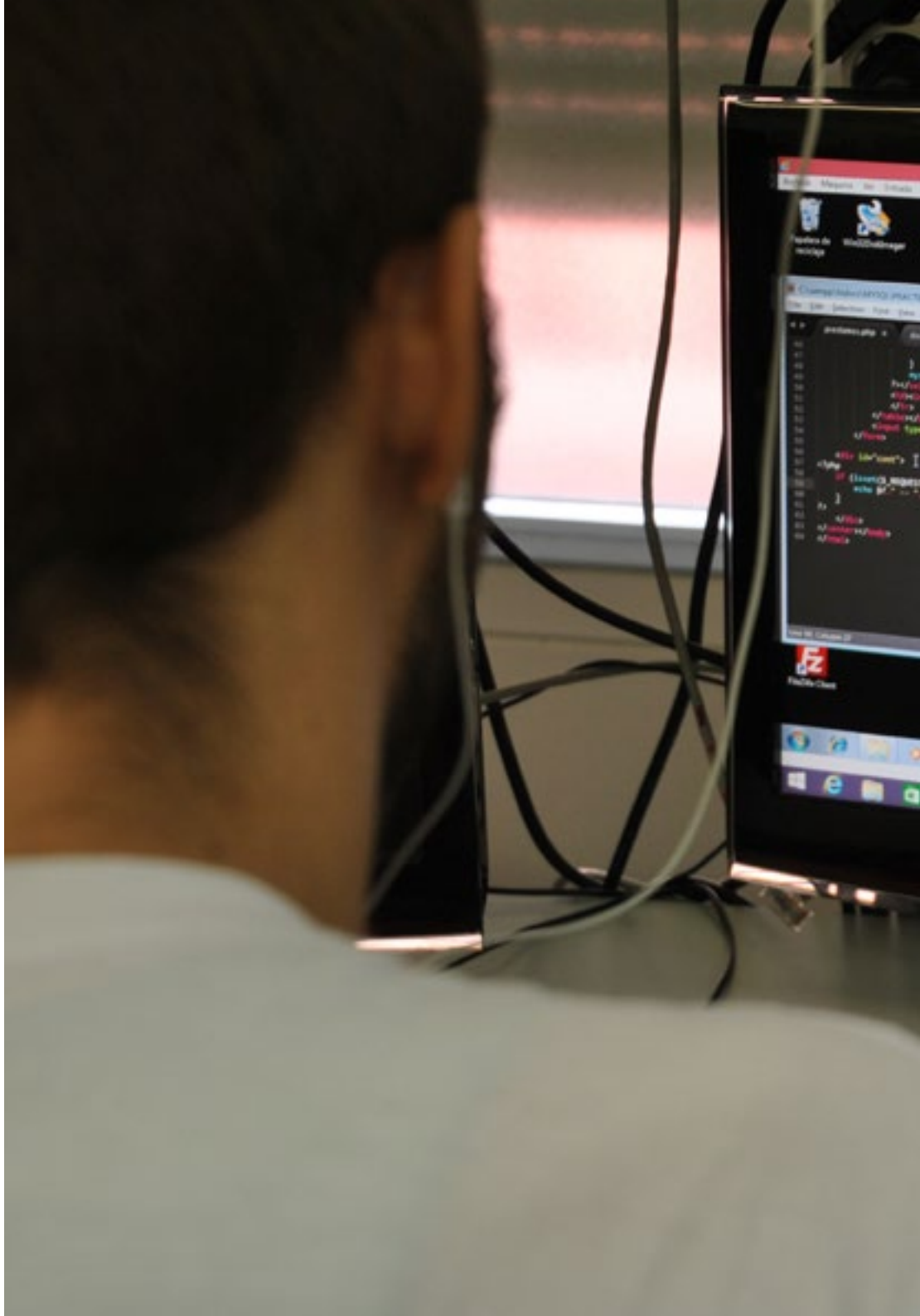
This university program aims to enhance the knowledge of professionals in Systems Computing. It will also provide the necessary theoretical and practical foundations to navigate complex computing environments with expertise, through the study of the internal structure of hardware, the physical principles of digital processing, and the logical architecture of systems. Through this university program, you will strengthen your command of technical tools and languages that enable you to intervene with insight in the analysis, configuration, and improvement of technological infrastructures, consolidating essential competencies for innovation and operational efficiency in the field of computer sciences.

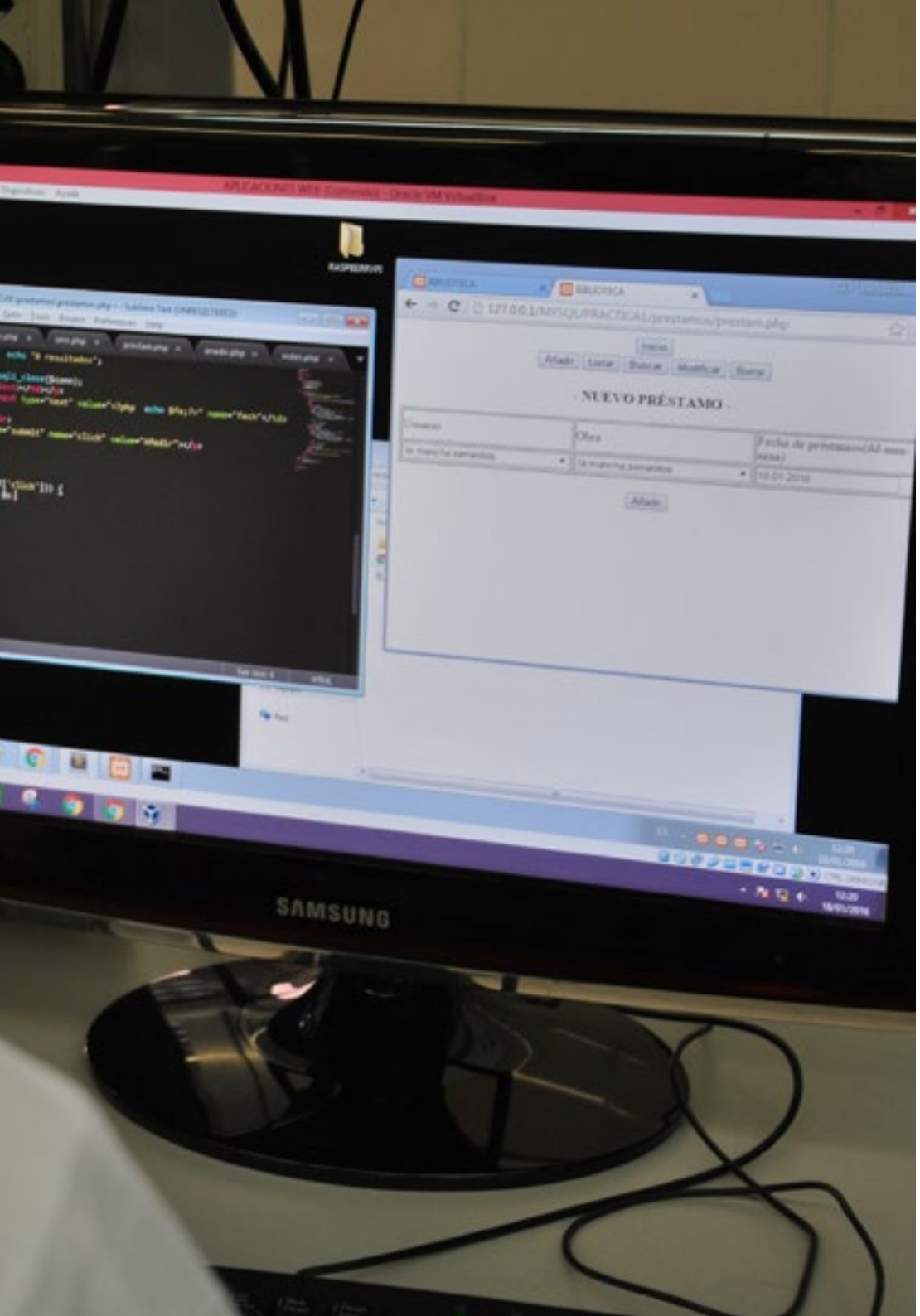
Be part of an exclusive program from TECH and lead Systems Computing projects in your role as a highly specialized expert"

General Objectives

- Understand the physical fundamentals that support the functioning of computer systems, considering their implications in design and technological development.
- Analyze computer technology from a structural and functional perspective, in order to interpret its evolution and current application.
- Examine the internal architecture of computational systems, identifying essential components and their operational interrelation.
- Explore processes and users efficiently.
- Dive deeper into advanced operating systems, addressing their configuration, management, and responsiveness in complex contexts.
- Appreciate the role of open-source software and open knowledge in technological innovation and democratizing access to computing tools.
- Develop competencies to manage computer networks, ensuring connectivity, performance, and security in distributed infrastructures.
- Identify and interpret emerging technologies applied to system integration and information protection in dynamic digital environments.

You will analyze, with advanced experience, the internal structure of hardware, understanding how its components interact with each other"





Specific Objectives

Module 1. Physical Fundamentals of Computing

- Acquire basic fundamental knowledge of engineering physics, such as fundamental forces and conservation laws
- Research the concepts related to energy, its types, measurements, conservation and units
- Know how electric, magnetic and electromagnetic fields work
- Understand the basic fundamentals of electrical circuits in direct current and alternating current
- Assimilate the structure of atoms and subatomic particles
- Understand the basics of quantum physics and relativity

Module 2. Computer Technology

- Explore the history of computers, as well as the main types of existing organizations and architectures
- Incorporate the necessary knowledge to understand computer arithmetic and the fundamentals of logical design
- Interpret the operation and composition of a computer, from the various devices that make it up to the ways they interact with each other
- Distinguish between different types of memory (internal memory, cache, and external memory), along with the operation of input and output devices
- Analyze the structure and operation of the processor, considering the control unit and micro-operations
- Recognize the fundamentals of machine instructions, their types, assembly language, and addressing modes

Module 3. Computer Structure

- Examine the fundamentals of computer design and evolution, including parallel architectures and levels of parallelism
- Evaluate the operation of various methodologies to measure a computer's performance, as well as the use of specific tools for performance testing
- Analyze the memory hierarchy, available storage types, and mechanisms related to data input and output
- Identify the characteristics of different types of processors, such as segmented, superscalar, VLIW, and vector processors
- Investigate the operation of parallel computers, understanding their motivation, capabilities, and internal architecture
- Delve into the properties of computer interconnection networks and multiprocessor system configurations

Module 4. Operating Systems

- Explore the basic concepts of operating systems and their structure, including services, system calls, and user interfaces
- Analyze the operation of process scheduling and the fundamentals related to processes and threads
- Understand the principles governing concurrency, mutual exclusion, synchronization, and deadlock
- Examine memory management in operating systems, including virtual memory and allocation policies
- Review the interface and implementation of operating systems, focusing on files, file systems, directory structures, and allocation methods
- Recognize the protection mechanisms implemented in operating systems and their impact on system security

Module 5. Advanced Operating Systems

- Deepen knowledge of operating systems, their functions, process management, memory, directories, files, and their security and design objectives
- Learn step by step about the different stages in the history of operating systems
- Understand the structure of the main existing operating systems
- Learn about the structure of the two main operating systems and how to use their terminals
- Delve into the foundations for scripting for the Shell and the main tools for programming in C
- Understand the operation of system calls, whether related to files or processes

Module 6. Free Software and Open Knowledge

- Recognize the fundamental concepts of free software and open knowledge, along with their associated licenses
- Identify free tools applied in different areas such as operating systems or content creation
- Appreciate the benefits of free software in business environments due to its functionality and low cost
- Examine the GNU/Linux operating system and its main customizable distributions
- Analyze the development of websites using WordPress and its global impact
- Understand the foundations of the Android system and approaches to cross-platform mobile development

Module 7. Computer Networks

- Incorporate essential knowledge about computer networks applied to the Internet
- Analyze the operation of the layers that make up a network system: application, transport, network, and link
- Explore the structure of LAN networks, their topology, and the main interconnection elements
- Investigate the principles of IP addressing and Subnetting techniques
- Examine the configuration of wireless and mobile networks, including 5G network characteristics
- Distinguish the security mechanisms and protocols for networks and the Internet

Module 8. Emerging Technologies

- Identify the most relevant mobile technologies and services in the current market
- Design user experiences aligned with the possibilities offered by emerging technologies
- Examine innovations in extended reality, including AR, VR applications, and location-based services
- Interpret the operation of the Internet of Things (IoT), its key elements, and its connection with the cloud and smart cities
- Understand the fundamental principles of blockchain and its applications in digital environments
- Explore the latest emerging technologies and begin the path toward research in this field

Module 9. Information Systems Security

- Structure an efficient schedule for time management, budgeting, and planning for potential risks
- Examine the types of attacks in networks and the most commonly used architectures in cybersecurity systems
- Implement key techniques for system protection and the creation of high-security code
- Recognize the main elements that form Botnets, spam, malware, and malicious software
- Establish solid foundations for digital forensics analysis and IT auditing processes
- Provide an integrated view of cybersecurity, modern cryptography, and classical cryptanalysis

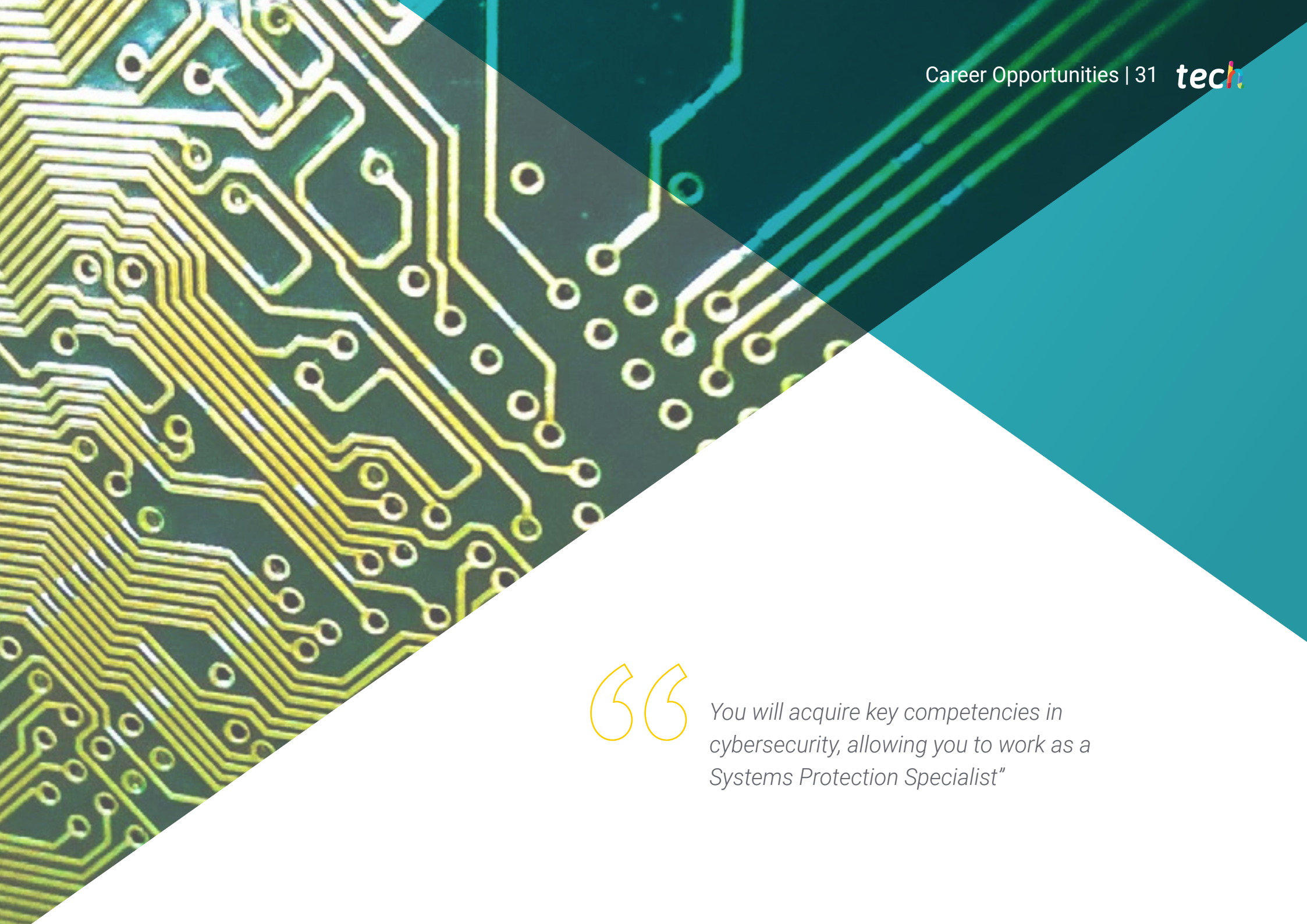
Module 10. Systems Integration

- Acquire essential concepts related to information systems in business, and identify the opportunities and needs for information systems in organizations
- Learn the basics of Business Intelligence, its strategies and implementation, as well as the present and future of BI
- Understand the operation of systems for integrated resource management in companies
- Understand digital transformation, from the perspective of business innovation, financial and production management, marketing, and human resource management

05

Career Opportunities

This Professional Master's Degree will enhance access to strategic positions in technology companies, data centers, or specialized consulting firms. Through a rigorous and up-to-date syllabus, it will enable professionals to take on roles such as system manager, network administrator, or cybersecurity specialist. Additionally, the program will equip them to intervene in the design of computational architectures or in the integration of emerging technologies in corporate environments. In this way, the student will become a key asset in broadening professional horizons in a sector marked by constant innovation and high demand for technical profiles with advanced competencies.



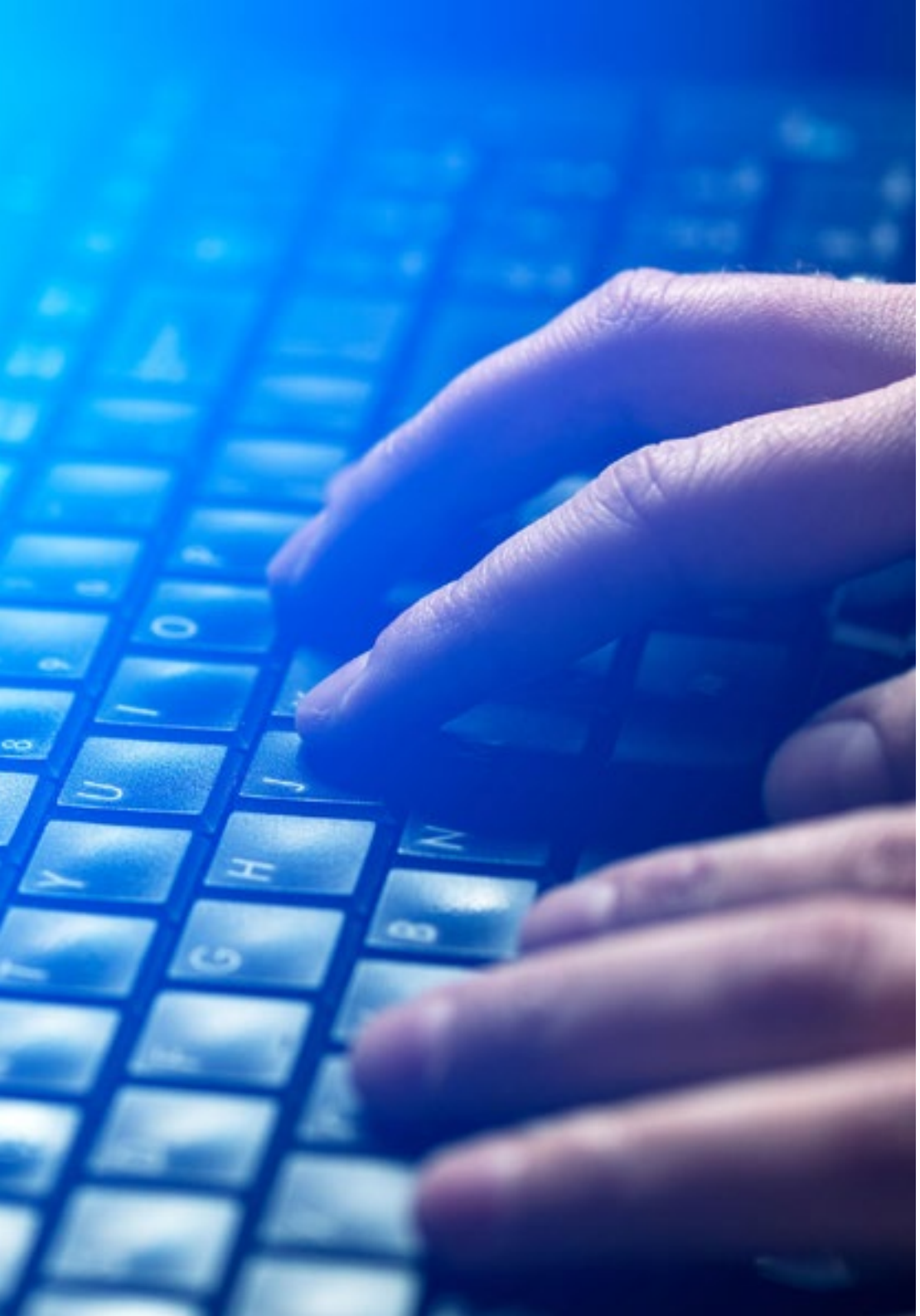
You will acquire key competencies in cybersecurity, allowing you to work as a Systems Protection Specialist"

Graduate Profile

The graduate will emerge as a professional with precise technical skills and the analytical capacity to face complex scenarios in the digital realm. In fact, they will be prepared to implement efficient solutions in computing systems, evaluate technological architectures, and manage operational environments with a strategic approach. Furthermore, they will have the skills to interpret trends in emerging technologies, integrate heterogeneous platforms, and apply protective mechanisms in IT infrastructures. As a result, they will stand out for their critical, versatile vision focused on continuous improvement, enabling them to perform confidently in highly technological sectors.

You will gain a holistic view of the lifecycle of computer systems, from planning and implementation to maintenance and monitoring.

- **Time Management:** Ability to efficiently organize technical and strategic tasks, prioritize key objectives, and meet deadlines in complex technological projects
- **Teamwork:** Skill aimed at promoting integration in collaborative environments, enhancing synergy between professionals from different specialties to achieve common goals
- **Continuous Learning Capacity:** The ability of professionals to drive continuous updates in response to new languages, systems, or tools, which is essential in a constantly evolving field
- **Proactive Leadership:** Competence to make decisions and coordinate initiatives in innovation projects, assuming responsibilities with a strategic vision



After completing the university program, you will be able to apply your knowledge and skills in the following positions:

1. **Cybersecurity Specialist:** Responsible for designing and implementing measures to protect information systems against cyberattacks, vulnerabilities, or unauthorized access, applying advanced protection protocols.
2. **Operating Systems Administrator:** Responsible for installing, configuring, and maintaining operating systems, ensuring their stability, scalability, and proper functioning in business environments.
3. **Computer Networks Engineer:** Dedicated to designing, overseeing, and optimizing network infrastructures, ensuring efficient connectivity between devices, servers, and users, both in local networks and distributed systems.
4. **GNU/Linux Systems Administrator:** Manager of servers based on open-source operating systems, configuring essential services, automating tasks with Shell, and ensuring a stable operational environment.
5. **Information Systems Analyst:** Focused on optimizing information flows within an organization, identifying technological needs, and proposing IT solutions tailored to each context.
6. **Systems Integration Specialist:** Focused on the interoperability between different technological platforms, facilitating communication between applications and services to enhance organizational efficiency.
7. **Computer Architecture Designer:** Involved in the conceptual and physical design of computing systems, evaluating hardware and software structures to maximize efficiency.
8. **IT Auditor:** Responsible for evaluating the security, reliability, and efficiency of an organization's IT systems, proposing improvements, and ensuring regulatory compliance.

06

Software Licenses Included

TECH is a leading reference in the academic world for combining the latest technology with teaching methodologies to enhance the teaching-learning process. To achieve this, it has established a network of alliances that allows it to access the most advanced software tools used in the professional world.

Upon enrolling, you will receive, completely free of charge, academic credentials for the following professional software applications"

TECH has established a network of professional alliances with the leading providers of software applied to various professional fields. These alliances allow TECH to access hundreds of software applications and licenses, making them available to its students.

The academic software licenses will allow students to use the most advanced applications in their professional field, so they can become familiar with them and master their use without incurring additional costs. TECH will handle the contracting process, allowing students to use them without limitation throughout their studies in the Professional Master's Degree in Systems Computing, and they will be able to do so completely free of charge.

TECH will provide free access to the following software applications:

Google Career Launchpad

Google Career Launchpad is a solution for developing digital skills in technology and data analysis. With an estimated value of **5,000 dollars**, it is included **for free** in TECH's university program, providing access to interactive labs and certifications recognized in the industry.

This platform combines technical training with practical cases, using technologies such as BigQuery and Google AI. It offers simulated environments to work with real data, along with a network of experts for personalized guidance.

Key Features:

- **Specialized Courses:** Updated content in cloud computing, machine learning, and data analysis
- **Live Labs:** Hands-on practice with real Google Cloud tools, no additional configuration required
- **Integrated Certifications:** Preparation for official exams with international validity
- **Professional Mentoring:** Sessions with Google experts and technology partners
- **Collaborative Projects:** Challenges based on real-world problems from leading companies

In conclusion, **Google Career Launchpad** connects users with the latest market technologies, facilitating their entry into fields such as artificial intelligence and data science with industry-backed credentials.

Thanks to TECH, you will be able to use the best professional software applications in your field for free"

07

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career"

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.

"At TECH you will NOT have live classes (which you might not be able to attend)"

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"*

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.

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 university methodology top-rated by its students

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

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, 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.

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.

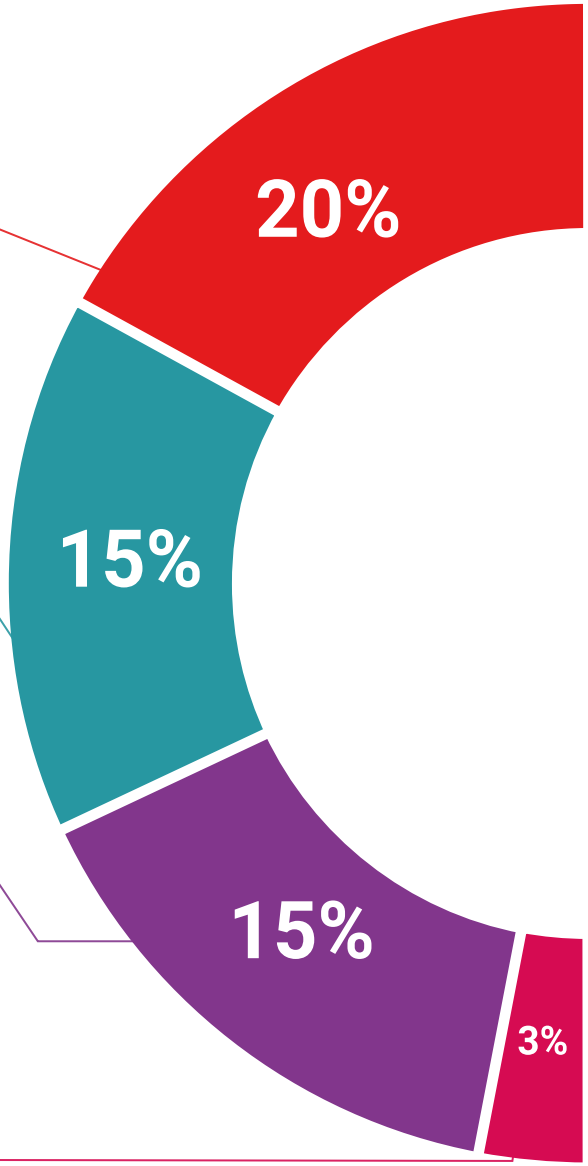
Interactive Summaries

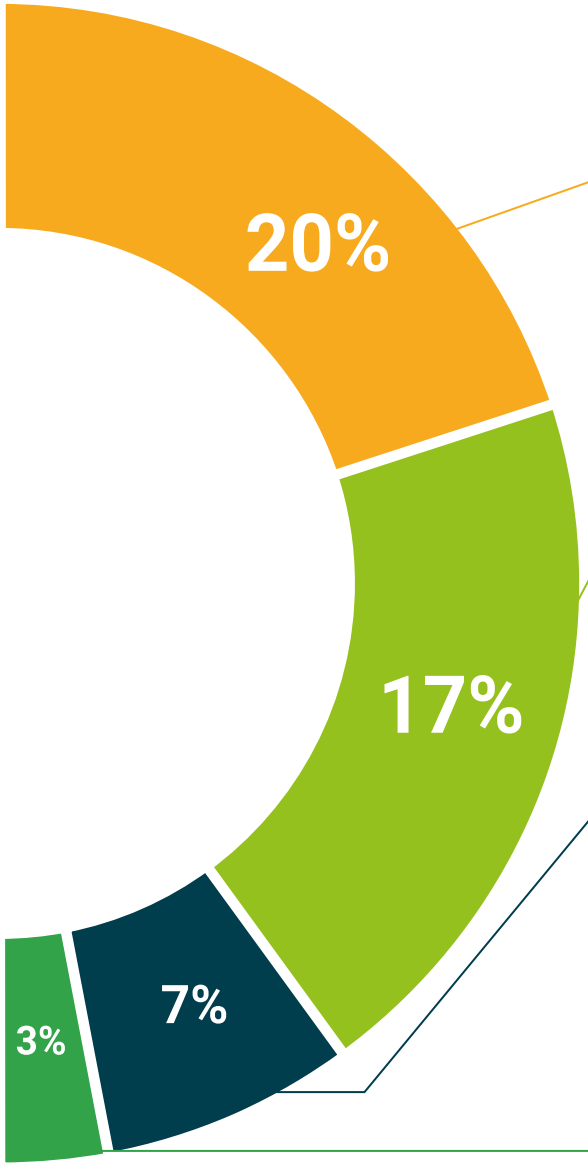
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.

08

Certificate

The Professional Master's Degree in Systems Computing guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Professional 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 private qualification will allow you to obtain a**Professional Master's Degree in Systems Computing** 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.

TECH is a member of the **Association for Computing Machinery (ACM)**, the international network that brings together leading experts in computing and information sciences. This membership strengthens its commitment to academic excellence, technological innovation, and the training of professionals in the digital field.

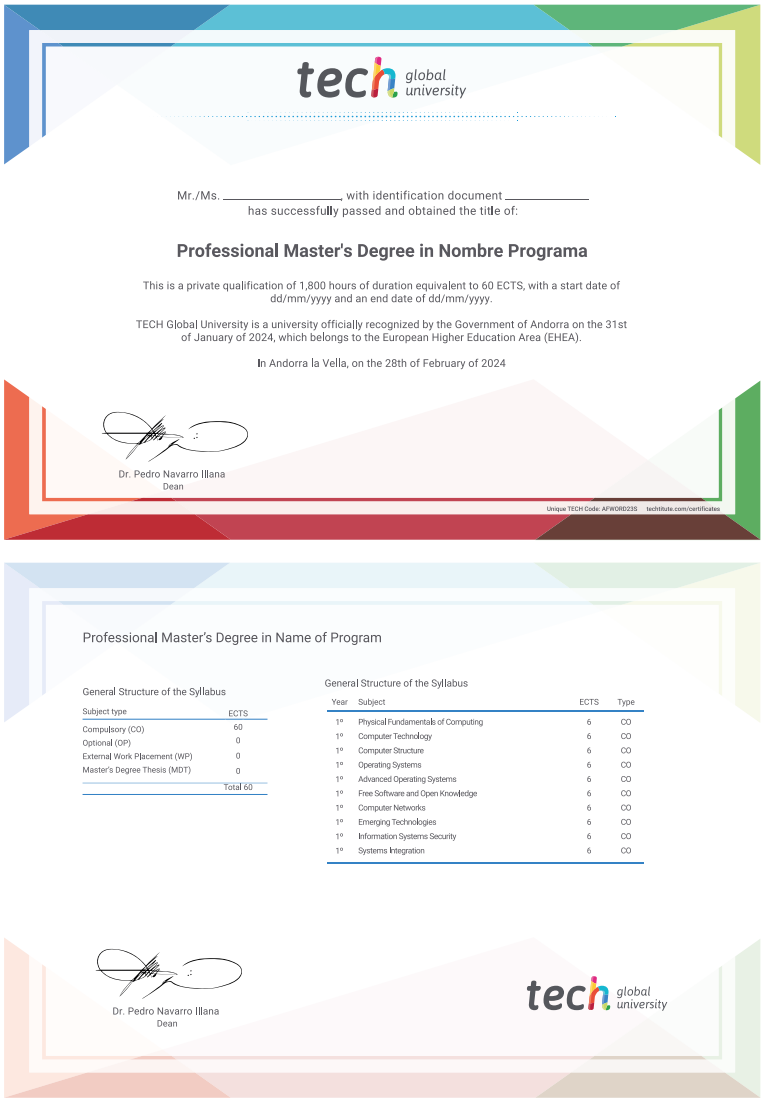
Accreditation/Membership

Title: **Professional Master's Degree in Systems Computing**

Modality: **online**

Duration: **12 months.**

Accreditation: **60 ECTS**



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Mr./Ms. _____ with identification document _____
has successfully passed and obtained the title of:

Professional Master's Degree in Nombre Programa

This is a private qualification of 1,800 hours of duration equivalent to 60 ECTS, with a start date of 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

Dr. Pedro Navarro Illana
Dean

Unique TECH Code: AFWOR023S techtitute.com/certificates

Professional Master's Degree in Name of Program

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 60

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Physical Fundamentals of Computing	6	CO
1º	Computer Technology	6	CO
1º	Computer Structure	6	CO
1º	Operating Systems	6	CO
1º	Advanced Operating Systems	6	CO
1º	Free Software and Open Knowledge	6	CO
1º	Computer Networks	6	CO
1º	Emerging Technologies	6	CO
1º	Information Systems Security	6	CO
1º	Systems Integration	6	CO

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Dean

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*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.

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Professional Master's Degree
Systems Computing

- Modality: **Online**
- Duration: **12 months.**
- Certificate: **TECH Global University**
- Accreditation: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree
Systems Computing

Accreditation/Membership

Association
for Computing
Machinery

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