Postgraduate Diploma

Mobile Application Architecture

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Postgraduate Diploma

Mobile Application Architecture

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

Website: www.techtitute.com/pk/information-technology/postgraduate-diploma/postgraduate-diploma-mobile-application-architecture

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01

Introduction

Experience professional online learning from experts, who will share exclusive content and the best experiences for your learning"

The palpable familiarity with which mobile devices accompany the user on a daily basis may lead one to believe that their full potential is already known and exploited. But the regular updates of the most popular brands' devices, or the routine arrival of new and cloned products on the market, show that there are still many different scenarios to be explored.

In many of the interactions that these mobile devices already mediate, there is still room for improvement; they can still be made more efficient. It is undeniable that mobile devices have changed the world forever, but their transformative power has not been exhausted, nor has the human imagination, so there are infinite possibilities for which it is necessary to become professional.

In the same way, one of the essential parts of mobile application development is persistence data management. This is typical of any application that handles user data and not only of desktop applications or web applications. This program will address how to use each of the most commonly used databases, in which cases each of them are more suitable, establishing ways to test their capabilities locally.

Finally, the no less important topic of security will be developed. This Postgraduate Diploma will develop the most advanced aspects of security and privacy threats present in the use of mobile devices and will provide practical tips and tricks to improve the protection of the mobile device, raising awareness of its importance.

All this deployed in a varied content format, adjustable to a completely online platform, and a revolutionary pedagogical methodology for its study in 6 months. Being able to specialize or improve your professional skills without giving up any of your current activities and responsibilities. Therefore, in 6 months, students will acquire the precise basis to undertake consulting tasks in all aspects related to mobile technology, develop their own business or climb positions in their employment status.

This **Postgraduate Diploma in Mobile Application Architecture** contains the most complete and up-to-date program on the market. The most important features include:

- The development of practical cases presented by experts in Mobile Application Development
- The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve 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

You will learn in depth about the main Mobile Device platforms, identifying their advantages, their differentiating components, their capabilities and limitations"

The most common mobile activities are instant messaging and social networks (74%), shopping (60%) and consulting news and information (59%). Develop applications with a suitable architecture for each need"

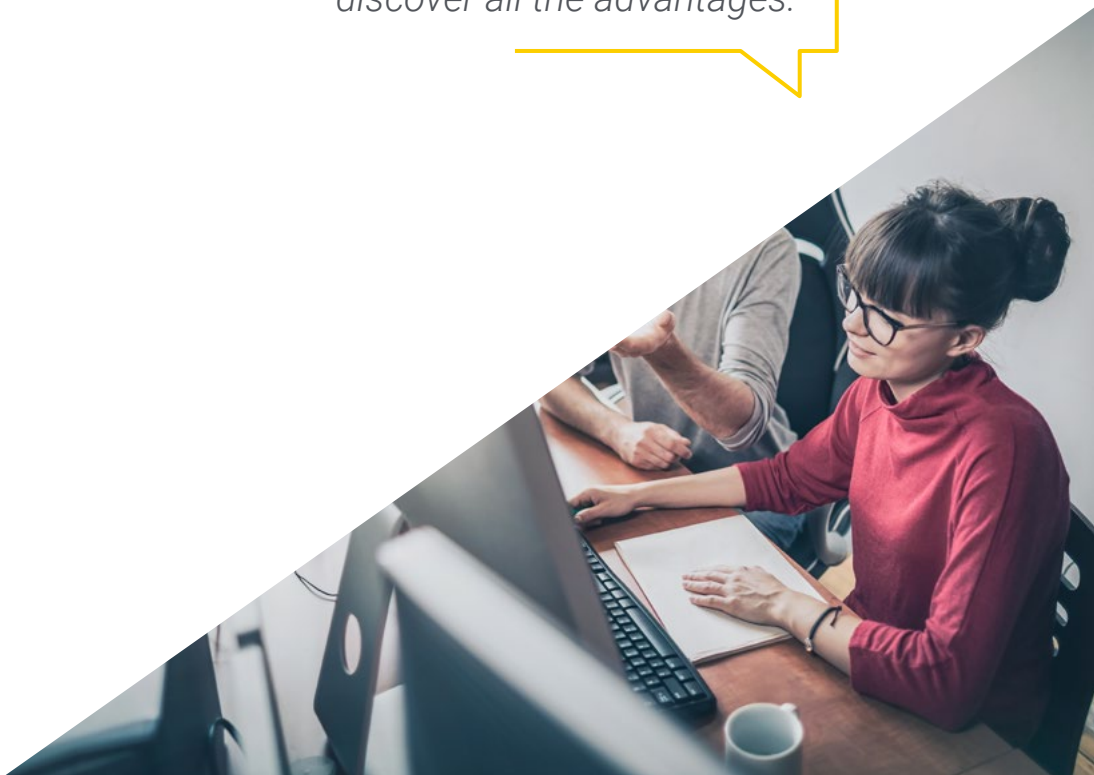
With TECH, you can experience a way of learning that is shaking the foundations of traditional universities around the world.

TECH is the only university in the world licensed to use the Relearning study methodology. Enroll now and discover all the advantages.

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, 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 education programmed to prepare in real situations.

The design of this program focuses on Problem-Based Learning, by means of which professionals must try to solve the different professional practice situations that are presented to them throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Objectives

The aim of this Postgraduate Diploma is to provide graduates with the necessary skills to have the correct architecture during the application development phase, which will allow them to implement maintenance, as well as to validate new functions in parallel to the public project and avoid possible incidents. Therefore, it has been structured in such a way that it meets all the requirements for the professionalization of the developer, and they can raise their profile and work aspirations within a highly demanded and competitive market.

Start this Postgraduate Diploma now and take the step towards a successful future in your professional career"

General Objectives

- Execute the design of architectures, iterations and user interfaces through the programming languages of the most representative mobile platforms on the market (Web, IOS and Android)
- Apply error control, testing and debugging mechanisms in mobile application development
- Master the practical knowledge to plan and manage technology projects related to mobile technologies
- Develop the skills, aptitudes and tools necessary to learn to develop mobile applications in an autonomous and professional manner, on multi-platform devices

Specific Objectives

Module 1. Technologies in Mobile Application Development

- Establish concepts for mobile devices
- Compile the main platforms
- Examine their common components
- Identify differentiating components, their capabilities and limitations
- Define the different scenarios in which they can operate Advantages
- Analyze the different interactions that these devices can mediate
- Raise awareness of the different abuses that can be committed

Module 2. Databases for Mobile Application Development

- Identify the best database model in relation to the characteristics of the mobile application
- Establish the capabilities of each of the database systems
- Determine the differences between the different databases
- Examine how to connect to and load/extract data from different types of databases
- Analyze the basic capabilities of development environments with database capabilities including

Module 3. Security on Mobile Devices

- Determine the security features and levels of security on a mobile device
- Establish the techniques to be used to secure a device
- Analyze the common errors in security
- Examine the mechanisms enabled in programming to avoid security breaches
- Specify the recommendations given by the security agencies
- Compile the different solutions available on the market for managing the security of mobile devices within the enterprise
- Analyze the cryptographic processes applied to mobile security

You will master techniques to secure mobile devices and make the user and business experience much more secure"

03

Course Management

This Postgraduate Diploma is taught by teachers with extensive knowledge and experience in new technologies, solution architecture and digital infrastructure, experts in Android programming and application developers. Thanks to their extensive experience, they offer a guarantee of quality of the content selected for this program, betting on the optimization of the learning process of professionals who seek in this space the contribution they need for their professional success and accompanying them throughout the process.

TECH chooses the best specialists to deliver quality content to its students. Accompanying them in their learning process in an efficient way"

Management

Mr. 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 España SL.

Professors

Mr. Gómez Rodríguez, Antonio

- Principal Cloud Solutions Engineer for Oracle
- Co-organizer of Málaga Developer Meetup
- Specialist Consultant for Sopra Group and Everis
- Team Leader at System Dynamics
- Software Developer at SGO Software
- Master's Degree in E-Business from La Salle Business School
- Postgraduate Degree in Information Technologies and Systems, Catalan Institute of Technology
- Degree in Telecommunications Engineering from the Polytechnic University of Catalonia.

Mr. Gozalo Fernández, Juan Luis

- Blockchain-based Product Manager for Open Canarias
- Blockchain DevOps Director at Alastria
- Director of Service Level Technology at Santander Spain
- Tinkerlink Mobile Application Development Manager at Cronos Telecom
- IT Service Management Technology Director at Barclays Bank Spain
- Bachelor's Degree in Computer Engineering from UNED
- Deep Learning Specialization in DeepLearning.ai

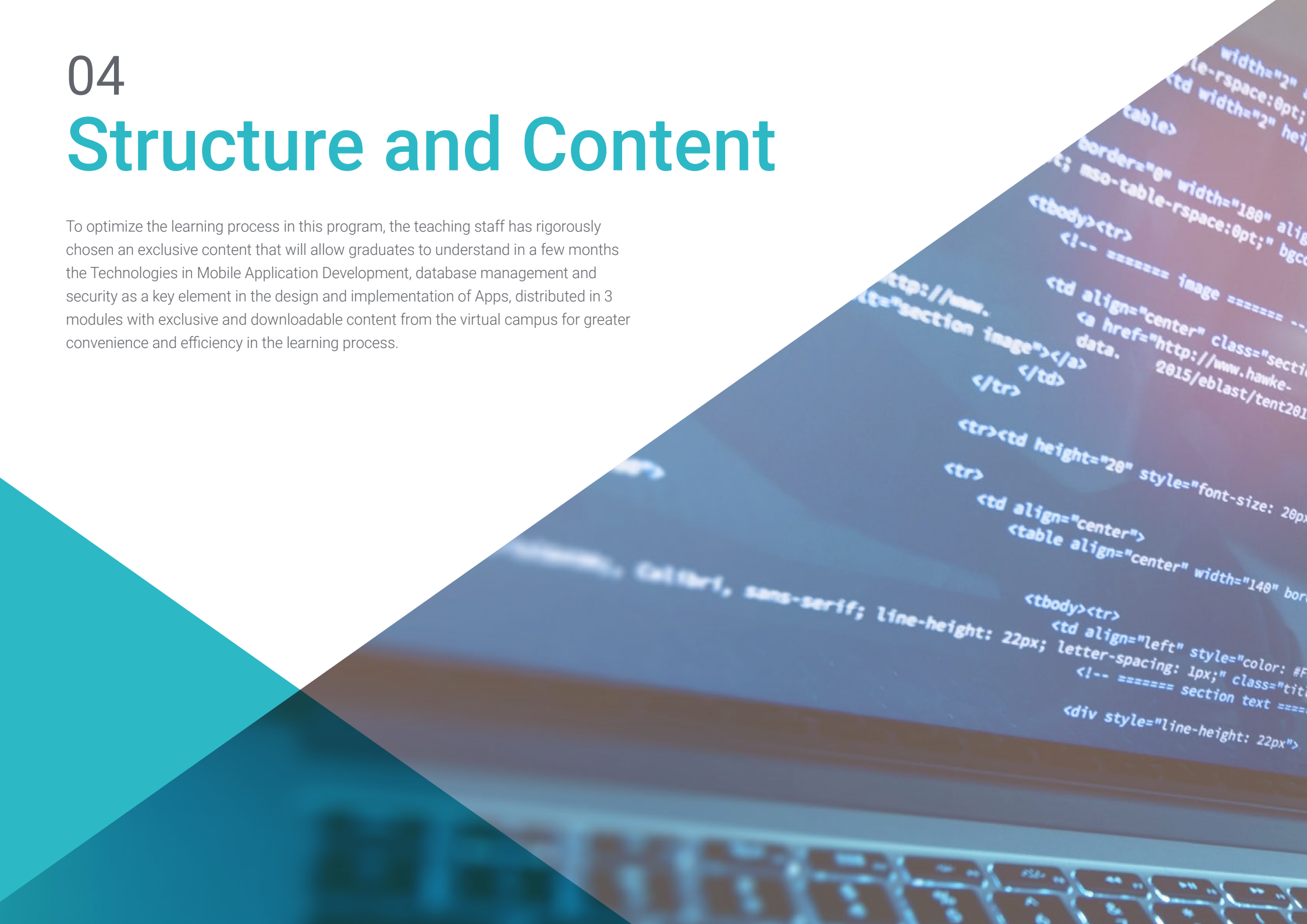
Mr. Rodríguez Fuentes, Alberto

- Process and System Engineer at NTTData
- Process and System Engineering Technician at NTTData
- Master's Degree in Cybersecurity and Information Security
- Graduate in Computer Engineering
- CCNA Security Certification

04

Structure and Content

To optimize the learning process in this program, the teaching staff has rigorously chosen an exclusive content that will allow graduates to understand in a few months the Technologies in Mobile Application Development, database management and security as a key element in the design and implementation of Apps, distributed in 3 modules with exclusive and downloadable content from the virtual campus for greater convenience and efficiency in the learning process.



You will have exclusive content for your specialization in Mobile Application Architecture with the most up-to-date technology"

Module 1. Technologies in Mobile Application Development

1.1. Mobile Devices
- 1.1.1. Mobile Devices
- 1.1.2. Infrastructure of a Mobile Device
- 1.1.3. Hardware Manufacturers
- 1.1.4. Software Developers
- 1.1.5. Service Providers
- 1.1.6. Platform Providers
- 1.1.7. Main Platforms

1.2. Physical Components of Mobile Devices
- 1.2.1. Storage
  - 1.2.1.1. Immutable
  - 1.2.1.2. Mutable
  - 1.2.1.3. Temporal
  - 1.2.1.4. External
- 1.2.2. Presenters
  - 1.2.2.1. Displays, Loudspeakers, Haptic Responses
- 1.2.3. Input Methods
  - 1.2.3.1. Buttons/Keypads
  - 1.2.3.2. Screens
  - 1.2.3.3. Microphones
  - 1.2.3.4. Movement Sensors
- 1.2.4. Energy Sources
  - 1.2.4.1. Sources of Energy
  - 1.2.4.2. Adaptive Use of Resources
  - 1.2.4.3. Efficient Programming
  - 1.2.4.4. Sustainable Development

1.3. Processors
- 1.3.1. Central Processor
- 1.3.2. Other Abstracted Processors
- 1.3.3. Artificial Intelligence Processors

1.4. Information Transmitters
- 1.4.1. Long Range
- 1.4.2. Mid-Range
- 1.4.3. Short Range
- 1.4.4. Ultra-Short Range

1.5. Sensors
- 1.5.1. Internal to the Device
- 1.5.2. Environmental.
- 1.5.3. Medical

1.6. Logic Components
- 1.6.1. Immutable
- 1.6.2. Manufacturer Mutable
- 1.6.3. Available to the User

1.7. Categorization
- 1.7.1. Laptops
- 1.7.2. Smartphones
  - 1.7.2.1. Tablets
  - 1.7.2.2. Multimedia Devices
  - 1.7.2.3. Intelligent Complements
- 1.7.3. Robotic Assistants

1.8. Modes of Operation
- 1.8.1. Disconnected
- 1.8.2. Connected
- 1.8.3. Always Available
- 1.8.4. Point to Point

1.9. Interactions
- 1.9.1. User-Mediated Interactions
- 1.9.2. Supplier-Mediated Interactions
- 1.9.3. Devices-Mediated Interactions
- 1.9.4. Environmentally Mediated Interactions

1.10. Security/Safety
- 1.10.1. Measures Implemented by the Manufacturer
- 1.10.2. Measures Implemented by Suppliers
- 1.10.3. User-Applied Security
- 1.10.4. Privacy

Module 2. Databases for Mobile Application Development

2.1. Databases in Mobile Devices
- 2.1.1. Data Persistence in Mobile Application Development
- 2.1.2. Database Capabilities for Mobile Apps
- 2.1.3. SQL Structured Query Language

2.2. Choice of Database for Mobile Applications
- 2.2.1. Database-Driven Analysis of Applications in Mobile Devices
- 2.2.2. Database Categories
- 2.2.3. Database Overview

2.3. Development with SQLite
- 2.3.1. SQLite Database
- 2.3.2. Deployment of the Model
- 2.3.3. Connection to SQLite

2.4. Development with Oracle Berkeley DB
- 2.4.1. Berkeley DB Database
- 2.4.2. Model Deployment
- 2.4.3. Connection to Berkeley DB

2.5. Development with Realm
- 2.5.1. Realm Capabilities
- 2.5.2. Database Creation in Realm
- 2.5.3. Connection to Realm

2.6. Development with CouchDB Lite
- 2.6.1. CouchDB Lite Database
- 2.6.2. Database Creation with CouchDB Lite
- 2.6.3. Connection with CouchDB Lite

2.7. Development with MySQL Centralized Database
- 2.7.1. MySQL Database
- 2.7.2. Deployment of Relational Model with MySQL
- 2.7.3. Connection to MySQL

2.8. Centralized Developments Oracle, MS SQL Server, MongoDB
- 2.8.1. Development with Oracle
- 2.8.2. Development with MS SQL Server
- 2.8.3. Development with MongoDB

2.9. Graph Type Data
- 2.9.1. Graph Oriented Database
- 2.9.2. Database Creation with Neo4j
- 2.9.3. Connection to Neo4j from the Mobile App

2.10. Environments with Storage Capacities
- 2.10.1. Firebase Developments
- 2.10.2. Core Data Developments
- 2.10.3. Visual Builder Cloud Service Development

Module 3. Security on Mobile Devices

3.1. Mobile Device Security Architecture
- 3.1.1. Physical Security of Devices
- 3.1.2. Operating System Security
- 3.1.3. Application Security
- 3.1.4. Data Security
- 3.1.5. Communications Security
- 3.1.6. Security of Enterprise Devices

3.2. Securing Mobile Hardware
- 3.2.1. Mobile Devices
- 3.2.2. Wearable Devices
- 3.2.3. Automotive
- 3.2.4. IoT Devices
- 3.2.5. TV Devices

3.3. Operating System Security
- 3.3.1. Android Mobile Devices
- 3.3.2. Apple IOS Mobile Devices
- 3.3.3. Other Existing Mobile Devices: Blackberry, etc
- 3.3.4. Wearable Devices
- 3.3.5. Automotive Operating Systems
- 3.3.6. Mobile Devices in the Internet of Things (IoT)
- 3.3.7. SmartTV Devices

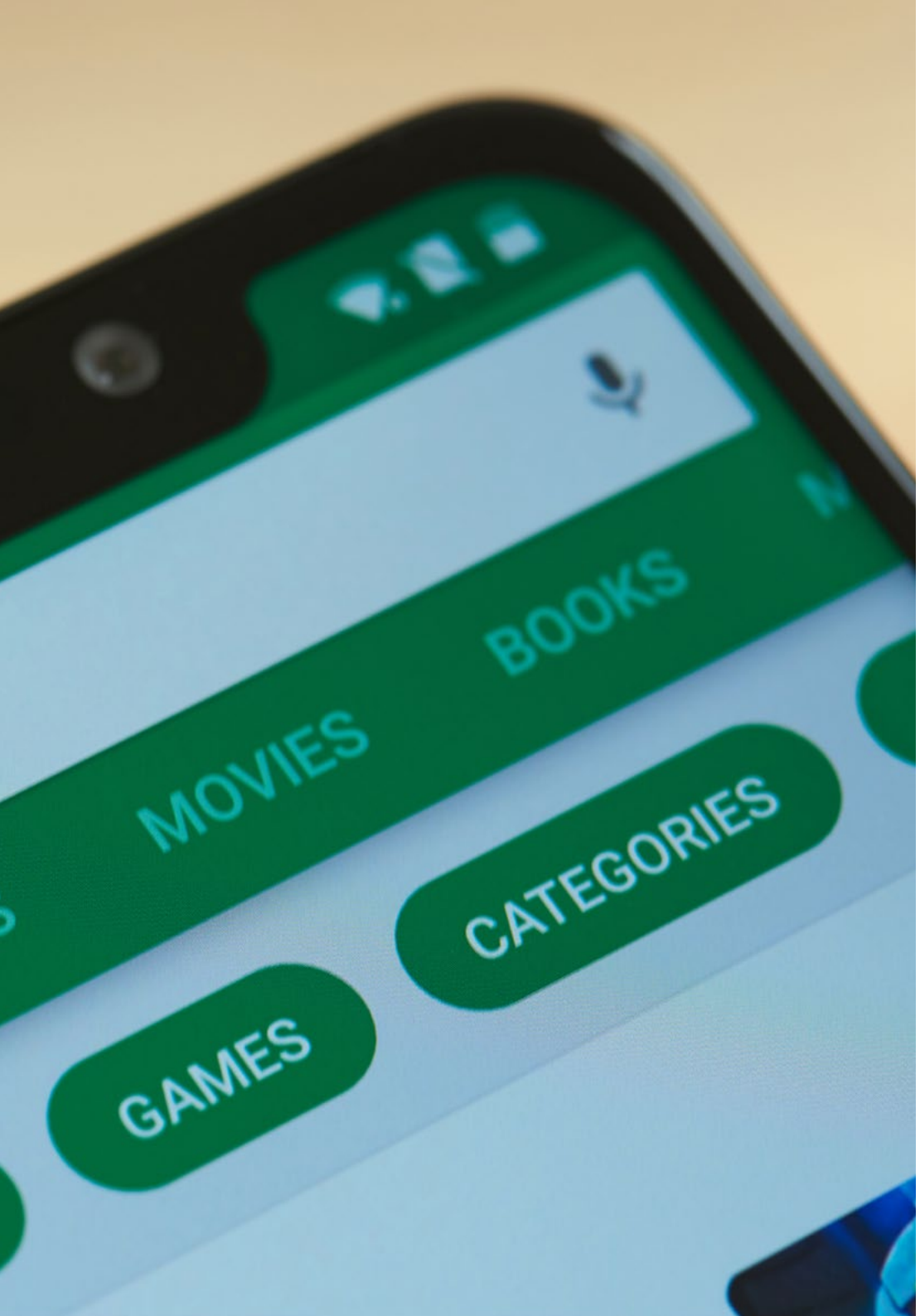
3.4. Securing Mobile Applications
- 3.4.1. Android Mobile Devices
- 3.4.2. Apple IOS Mobile Devices
- 3.4.3. Other Mobile Devices Blackberry
- 3.4.4. Wearables Devices
- 3.4.5. Automotive Operating Systems
- 3.4.6. Mobile Devices in the Internet of Things (IoT)
- 3.4.7. SmartTV Devices

3.5. Securing Data in Mobile Applications
- 3.5.1. Android Mobile Devices
- 3.5.2. Apple IOS Mobile Devices
- 3.5.3. Other Mobile Devices Blackberry
- 3.5.4. Wearables Devices
- 3.5.5. Automotive Operating Systems
- 3.5.6. Mobile Devices in the Internet of Things (IoT)
- 3.5.7. SmartTV Devices

3.6. Mobile Market Places Security
- 3.6.1. Google Play by Google
- 3.6.2. Play Store by Apple
- 3.6.3. Other Market Places
- 3.6.4. Mobile Rooting

3.7. Multi-Platform Security Solutions
- 3.7.1. Mobile Device Management (MDM)
- 3.7.2. Types of Solutions on the Market
- 3.7.3. Securing Devices Using MDM (Master Data Management)

3.8. Secure Mobile Application Development
- 3.8.1. Use of Patterns for Safe Development
- 3.8.2. Integrated Security Test Management
- 3.8.3. Secure Application Deployment



3.9. Permission Management in Mobile Devices
- 3.9.1. Permission Systems
- 3.9.2. Digital Signatures in the Android Application Package (APK)
- 3.9.3. Execution of Processes in the Core
- 3.9.4. Execution Threads and Events

3.10. Security Recommendations for Mobile Devices
- 3.10.1. NSA Recommendations on Mobile Devices
- 3.10.2. INCIBE Recommendations on Mobile Devices
- 3.10.3. ISO 27001:2013 Annex
  - 3.10.3.1. Mobile Device Use Policies

You decide how and where to study, because this program is completely online and uses the Relearning methodology to facilitate the learning process"

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

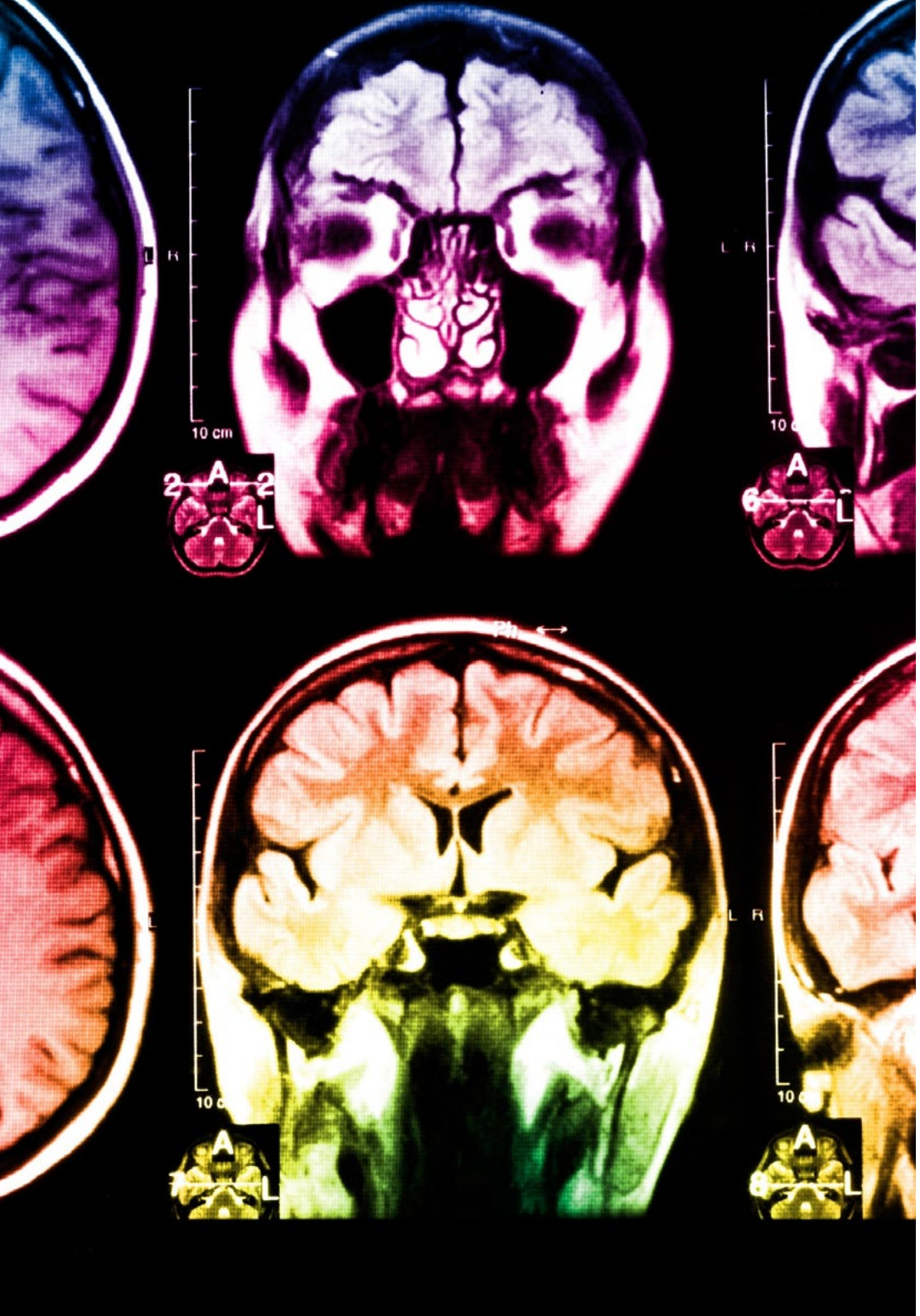
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

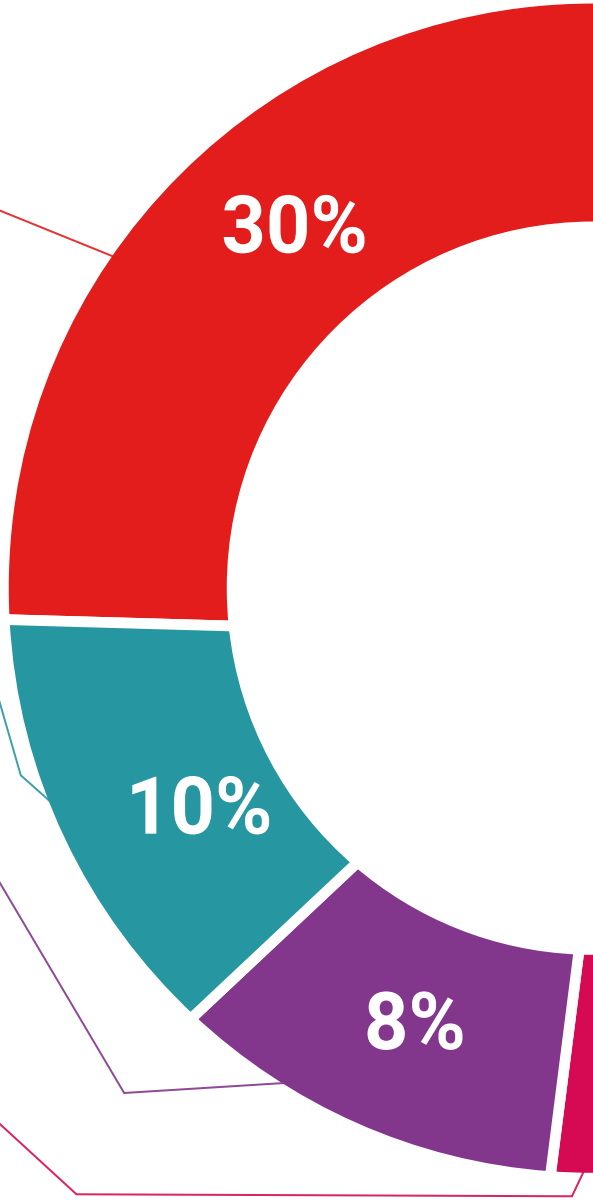
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

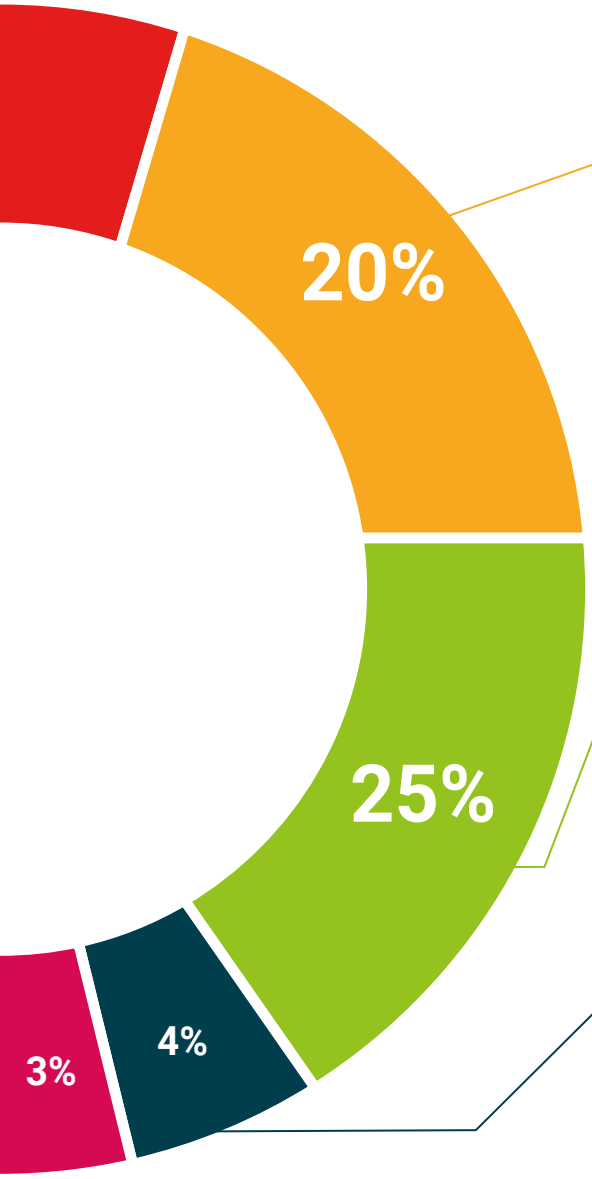
Practising Skills and Abilities

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 Diploma in Mobile Application Architecture guarantees students, in addition to the most rigorous and up-to-date education, access to a qualification issued by TECH Technological University.

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

This **Postgraduate Diploma in Mobile Application Architecture** 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 Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Mobile Application Architecture**

Official Nº of hours: **450 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Mobile Application Architecture

This is a qualification awarded by this University, equivalent to 450 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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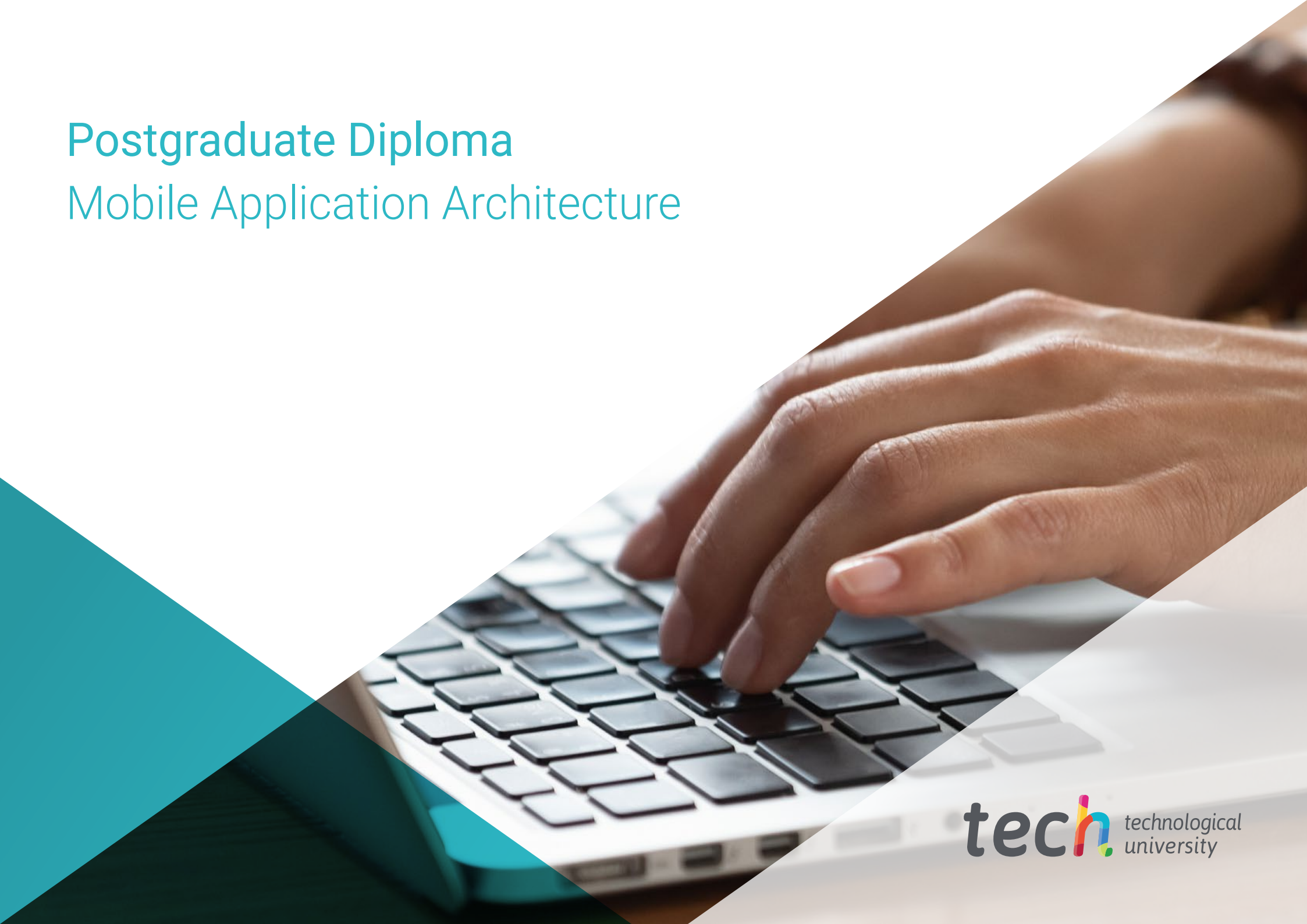

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