Postgraduate Diploma

Mobile Application Development Programming

tech technological university

tech technological university

Postgraduate Diploma

Mobile Application Development Programming

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

Website: www.techtitute.com/in/information-technology/postgraduate-diploma/postgraduate-diploma-mobile-application-development-programming

Index

01 Introduction p. 4

02 Objectives p. 8

03 Course Management p. 12

04 Structure and Content p. 16

05 Methodology p. 22

06 Certificate p. 30

01

Introduction

It is estimated that there are more than 7 billion mobile devices in the world, and they need different applications to function and be operational. The most common activities of the population include the use of applications for shopping, payments, transactions, transportation or studies. In this fast-moving market, it is necessary to specialize in the analysis techniques of mobile technology projects with the advantages of wireless communications, the different types of mobile devices and the alternatives for the development of applications. This program has been developed with that purpose in mind: to provide students with the necessary knowledge to master as experts the Mobile Application Development Programming in just months and in a virtual way, taking advantage of the most advanced study methodology.

Master the tools like an expert and understand the technologies implemented in Mobile Application Development Programming"

As credible as it may be for some professionals to believe they have mastered everything about mobile devices, there are still many scenarios in which they can play unimagined roles. There is still room for improvement in many of the interactions that these mobile devices already mediate; they can still be made much 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.

This Postgraduate Diploma will analyze the indispensable technical skills that the programmer must acquire to develop quality software: Git, GitHub, Command Terminal and other tools. As well as to provide specialized knowledge to carry out the installation and configuration of the most used tools as a programmer. To develop the key concepts of programming and the Internet, the Web and its operation, programming paradigms, logical structures, design principles, algorithm analysis and other relevant aspects that can be mastered upon completion of this program.

The teaching team will provide you with exclusive content designed for this program, in order to build a criterion that will facilitate the professional's decision-making in each project. That is why special care has been taken in drafting all the contents of this program, placing special emphasis not only on the most advanced theory but also on their own professional experience. The syllabus is therefore enriched by the teachers' own contributions, which adapt all the content to the reality of today's labor market.

To make access to this qualification more efficient, TECH has the best study methodology based on Relearning, and also 100% online, which avoids unnecessary travel and provides gains in time and quality in the process. 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 Development Programming** 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

Boost your career and specialize as a Mobile Application Development Programmer. Completely remotely and in the hands of experts"

With this program you will obtain the indispensable technical skills that the programmer must acquire to develop quality software: Git, GitHub, Command Terminal and other tools"

You will have multimedia resources and diverse content formats for an agile and efficient learning process.

Enroll now in this Postgraduate Diploma and don't wait any longer to stand out in your job or business.

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

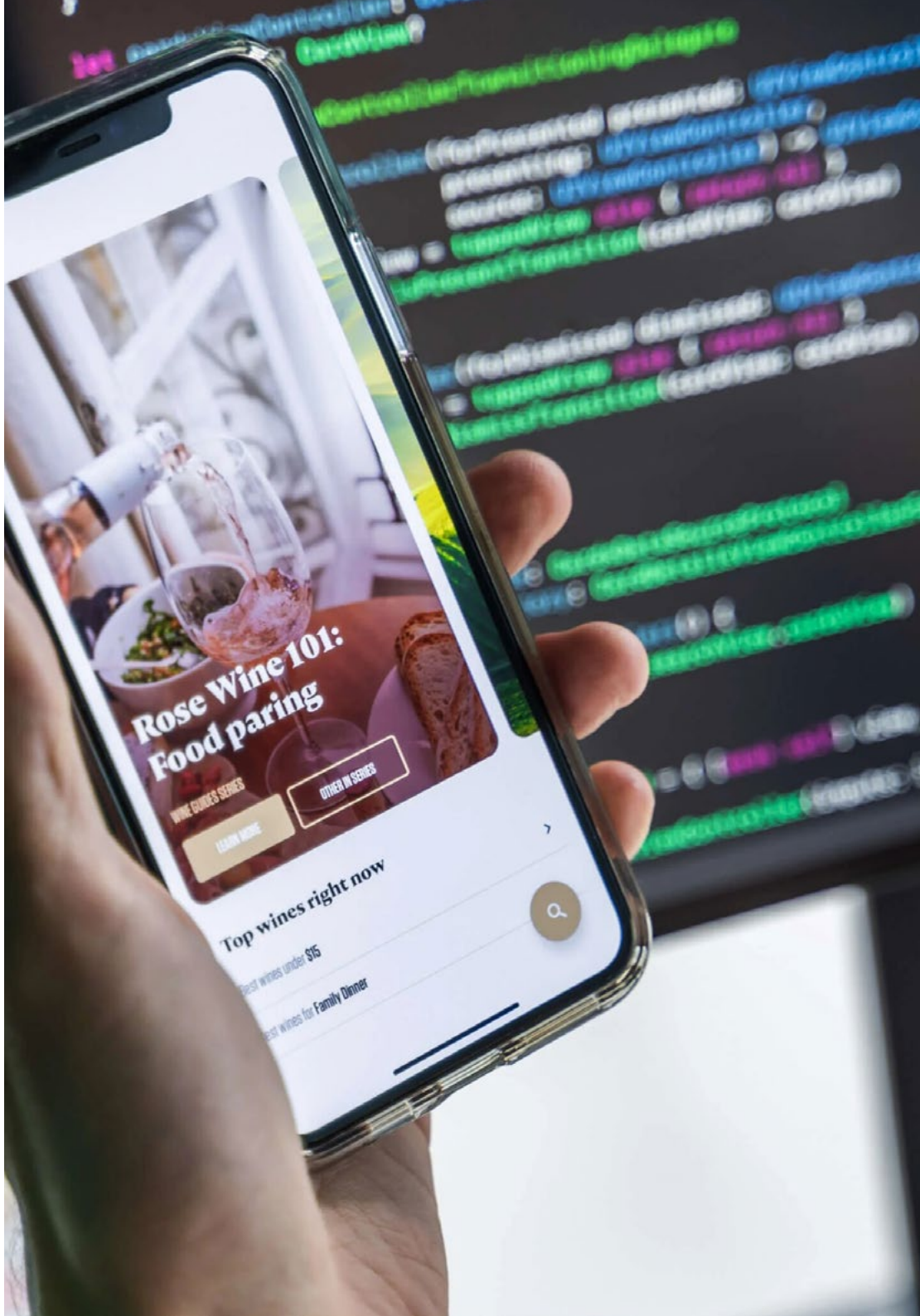
Objectives

Within this program there are clear objectives, both general and specific for each of the modules in which the content is structured. The graduates will be able to master as experts the key aspects to understand the Mobile Application Development Programming, from the general knowledge of mobile devices and multiplatform, as well as the mastery of the software and its tools for the future programmer.

You've come to the right place to set the path to a better future. TECH brings you the qualification that will develop your career and expand it to the next level"

General Objectives

- Analyze user needs and behavior in relation to mobile devices and their applications
- 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. Programming Methodologies in Mobile Application Development

- Explore traditional software development processes
- Analyze agile development processes
- Promote development practices
- Examine the different representation and diagramming techniques
- Deepen in the different design patterns present in the software industry
- Explore different software testing techniques
- Recognize the rules and standards of quality reference in development

Module 2. 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 3. Work Tools for Mobile Application Development

- Prepare the development environment
- Acquiring command terminal skills
- Efficient use of the version control system
- Address the use of remote code versioning systems
- Establish the key notions of internet operation
- Develop relevant software programming concepts
- Examine data structures
- Review algorithm design and interpretation techniques

You will cover the key concepts for planning, designing, building and testing software to develop quality products and avoid technical debt"

03

Course Management

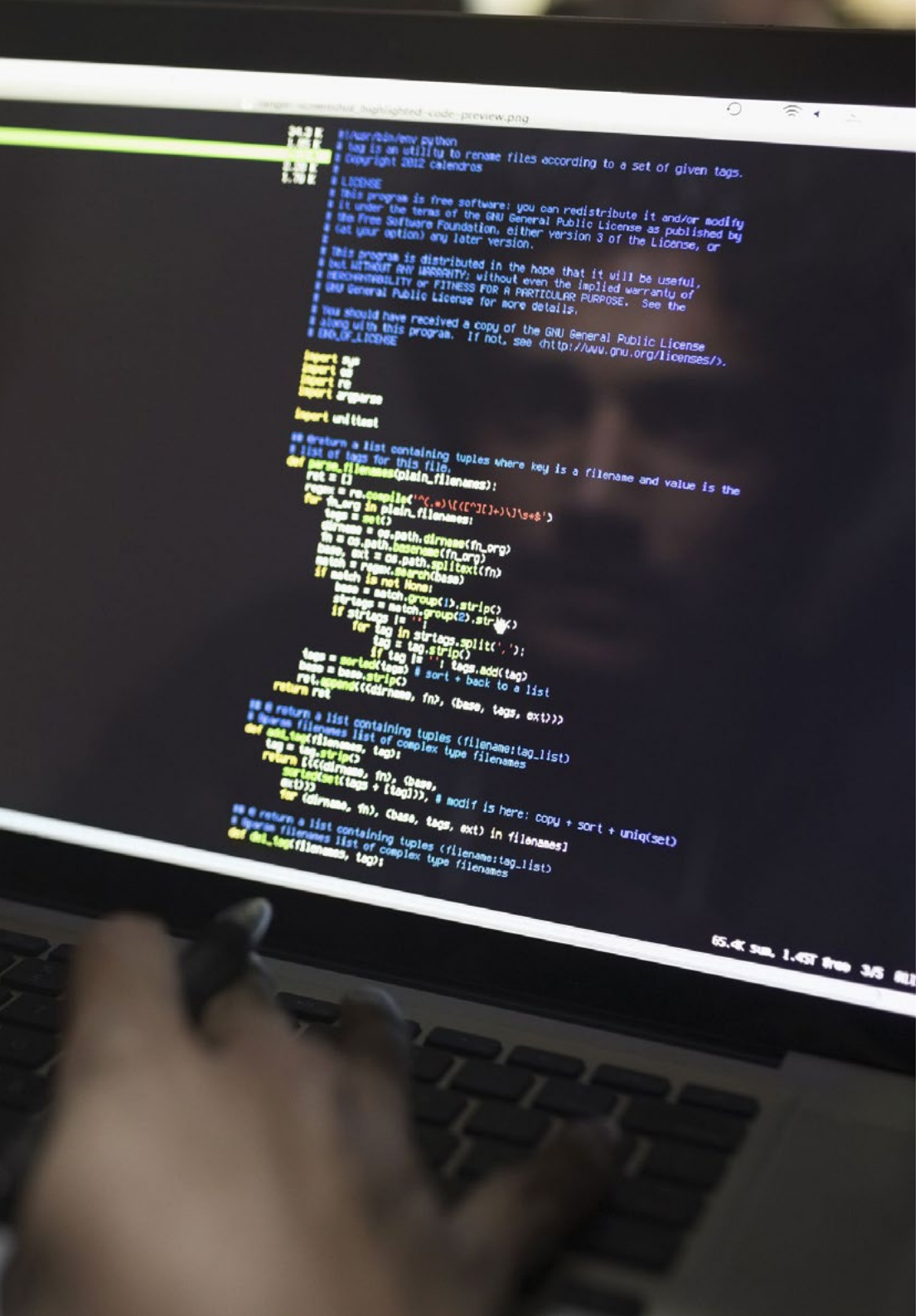
This Postgraduate Diploma is taught by teachers with extensive knowledge and experience in new technologies, solution architecture and digital infrastructure, experts in Android programming and application developers. Their extensive curriculums offer a guarantee of quality of the content selected for 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.

At TECH, you study 100% online, but you will never be alone. You have the support of experts who select exclusive content for your professionalization"

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

Ms. Ochoa Mancipe, Joanna Dulima

- Senior Development Analyst at Q-Vision Technologies
- Quality Engineer at Samtel
- Java Developer at Complemento 360
- Development Engineer at RUNT
- Support, Testing and Process and Information Modeling Engineer at the National University of Colombia
- Development Engineer at Union Solutions Information Systems
- Researcher of the Information Systems and ICT for Organizations Research Group of the National University of Colombia
- Degree in Systems and Computer Engineering from the National University of Colombia
- Master's Degree in Information Engineering, Los Andes University

Mr. Frias Favero, Pedro Luis

- Lead Blockchain Architect at EY
- Co-founder and Technical Director of Swear IT Technologies
- IT Support Director in Mexico, Colombia and Spain for Key Business One
- Degree in Industrial Engineering from Yacambú University
- Expert in Blockchain and Decentralized Applications from the University of Alcalá de Henares

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

For the deepest and most agile learning on Mobile Application Development Programming, TECH has provided this program that contains all the necessary content to develop as a professional in the subject. The expert teaching team has structured 3 modules with different specific subtopics that will make the student's journey much more bearable and digestible during the 6 months of duration, showing practical cases and using various audiovisual formats from the online platform, also having an interesting community to discuss the issues raised.

You will have access to exclusive and quality content, distributed in different formats to make your learning more agile and bearable"

Module 1. Programming Methodologies in Mobile Application Development

1.1. Software Development Processes
- 1.1.1. Waterfall
- 1.1.2. Spiral
- 1.1.3. RUP
- 1.1.4. V-Model

1.2. Agile Software Development Processes
- 1.2.1. Scrum
- 1.2.2. XP
- 1.2.3. Kanban

1.3. Unified Modeling Language (UML)
- 1.3.1. UML
- 1.3.2. Types of Modeling
- 1.3.3. Basic Blocks of UML

1.4. UML Behavioral Diagrams
- 1.4.1. Activity Diagram
- 1.4.2. Use Case Diagram
- 1.4.3. Interaction Overview Diagram
- 1.4.4. Timing Diagram
- 1.4.5. State Machine Diagram
- 1.4.6. Communication Diagram
- 1.4.7. Sequence Diagram

1.5. UML Structural Diagrams
- 1.5.1. Class Diagram
- 1.5.2. Object Diagram
- 1.5.3. Component Diagram
- 1.5.4. Composite Structure Diagram
- 1.5.5. Deployment Diagram

1.6. Creative Design Patterns
- 1.6.1. Singleton
- 1.6.2. Prototype
- 1.6.3. Builder
- 1.6.4. Factory
- 1.6.5. Abstract Factory

1.7. Structural Design Patterns
- 1.7.1. Decorator
- 1.7.2. Facade
- 1.7.3. Adapter
- 1.7.4. Bridge
- 1.7.5. Composite
- 1.7.6. Flyweight
- 1.7.7. Proxy

1.8. Behavioral Patterns
- 1.8.1. Chain of Responsibility
- 1.8.2. Command
- 1.8.3. Iterator
- 1.8.4. Mediator
- 1.8.5. Memento
- 1.8.6. Observer
- 1.8.7. State
- 1.8.8. Strategy
- 1.8.9. Template Method
- 1.8.10. Visitor

1.9. Testing
- 1.9.1. Unit Tests
- 1.9.2. Integration Tests
- 1.9.3. White Box Techniques
- 1.9.4. Black Box Techniques

1.10. Quality
- 1.10.1. ISO
- 1.10.2. ITIL
- 1.10.3. COBIT
- 1.10.4. PMP

Module 2. Technologies in Mobile Application Development

2.1. Mobile Devices
- 2.1.1. Mobile Devices
- 2.1.2. Infrastructure of a Mobile Device
- 2.1.3. Hardware Manufacturers
- 2.1.4. Software Developers
- 2.1.5. Service Providers
- 2.1.6. Platform Providers
- 2.1.7. Main Platforms

2.2. Physical Components of Mobile Devices
- 2.2.1. Storage
  - 2.2.1.1. Immutable
  - 2.2.1.2. Mutable
  - 2.2.1.3. Temporal
  - 2.2.1.4. External
- 2.2.2. Presenters
  - 2.2.2.1. Displays, Loudspeakers, Haptic Responses
- 2.2.3. Input Methods
  - 2.2.3.1. Buttons/Keypads
  - 2.2.3.2. Screens
  - 2.2.3.3. Microphones
  - 2.2.3.4. Movement Sensors
- 2.2.4. Energy Sources
  - 2.2.4.1. Sources of Energy
  - 2.2.4.2. Adaptive Use of Resources
  - 2.2.4.3. Efficient Programming
  - 2.2.4.4. Sustainable Development

2.3. Processors
- 2.3.1. Central Processor
- 2.3.2. Other Abstracted Processors
- 2.3.3. Artificial Intelligence Processors

2.4. Information Transmitters
- 2.4.1. Long Range
- 2.4.2. Mid Range
- 2.4.3. Short Range
- 2.4.4. Ultra-Short Range

2.5. Sensors
- 2.5.1. Internal to the Device
- 2.5.2. Environmental
- 2.5.3. Medical

2.6. Logic Components
- 2.6.1. Immutable
- 2.6.2. Manufacturer Mutable
- 2.6.3. Available to the User

2.7. Categorization
- 2.7.1. Laptops
- 2.7.2. Smartphones
  - 2.7.2.1. Tablets
  - 2.7.2.2. Multimedia Devices
  - 2.7.2.3. Intelligent Complements
- 2.7.3. Robotic Assistants

2.8. Modes of Operation
- 2.8.1. Disconnected
- 2.8.2. Connected
- 2.8.3. Always Available
- 2.8.4. Point to Point

2.9. Interactions
- 2.9.1. User-Mediated Interactions
- 2.9.2. Supplier-Mediated Interactions
- 2.9.3. Devices-Mediated Interactions
- 2.9.4. Environmentally Mediated Interactions

2.10. Security/Safety
- 2.10.1. Measures Implemented by the Manufacturer
- 2.10.2. Measures Implemented by Suppliers
- 2.10.3. User-Applied Security
- 2.10.4. Privacy

Module 3. Work Tools for Mobile Application Development

3.1. Environment and Tools for the Development of Applications for Mobile Devices
- 3.1.1. Preparation of the Environment for Mac OS
- 3.1.2. Preparation of the Environment for Linux
- 3.1.3. Preparation of the Environment for Windows

3.2. Command Line
- 3.2.1. Command Line
- 3.2.2. Emulators
- 3.2.3. Command Interpreter
- 3.2.4. Folder Creation
- 3.2.5. File Creation
- 3.2.6. Navigation
- 3.2.7. Managing Files and Folders Using the Command Line Interface
- 3.2.8. Licences
- 3.2.9. SSH
- 3.2.10. Command List

3.3. Software Repository Git
- 3.3.1. Version Control System
- 3.3.2. Git
- 3.3.3. Settings
- 3.3.4. Repository
- 3.3.5. Branches
- 3.3.6. Branch Management
- 3.3.7. Workflows
- 3.3.8. Merge
- 3.3.9. Commands

3.4. Web Service Version Control
- 3.4.1. Remote Repositories
- 3.4.2. Settings
- 3.4.3. Authentication
- 3.4.4. Branching of Software Fork
- 3.4.5. Git Clone Command
- 3.4.6. Repositories
- 3.4.7. Github Pages

3.5. Advanced Development Tools for Applications on Mobile Devices
- 3.5.1. Postman
- 3.5.2. Visual Studio Code
- 3.5.3. GUI for Databases
- 3.5.4. Hosting
- 3.5.5. Complementary Development Tools

3.6. Web from the Prism of Application Development for Mobile Devices
- 3.6.1. Protocols
- 3.6.2. Internet Service Provider
- 3.6.3. IP Addresses
- 3.6.4. DNS Name Services

3.7. Programming in the Development of Applications for Mobile devices
- 3.7.1. Programming in the Development of Applications for Mobile Devices
- 3.7.2. Programming Paradigms
- 3.7.3. Programming Languages

3.8. Application Development Components for Mobile Devices
- 3.8.1. Variables and Constants
- 3.8.2. Types
- 3.8.3. Operators
- 3.8.4. Declarations
- 3.8.5. Loops
- 3.8.6. Functions and Objects

3.9. Data Structure
- 3.9.1. Data Structure
- 3.9.2. Linear Structure Types
- 3.9.3. Functional Structure Types
- 3.9.4. Tree Structure Types

3.10. Algorithms
- 3.10.1. Algorithms in Programming. Divide and Conquer
- 3.10.2. Voracious Algorithms
- 3.10.3. Dynamic Programming

Obtain your qualification with this Postgraduate Diploma in 6 months from the comfort of your computer or preferred device. With a 100% online study system"

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

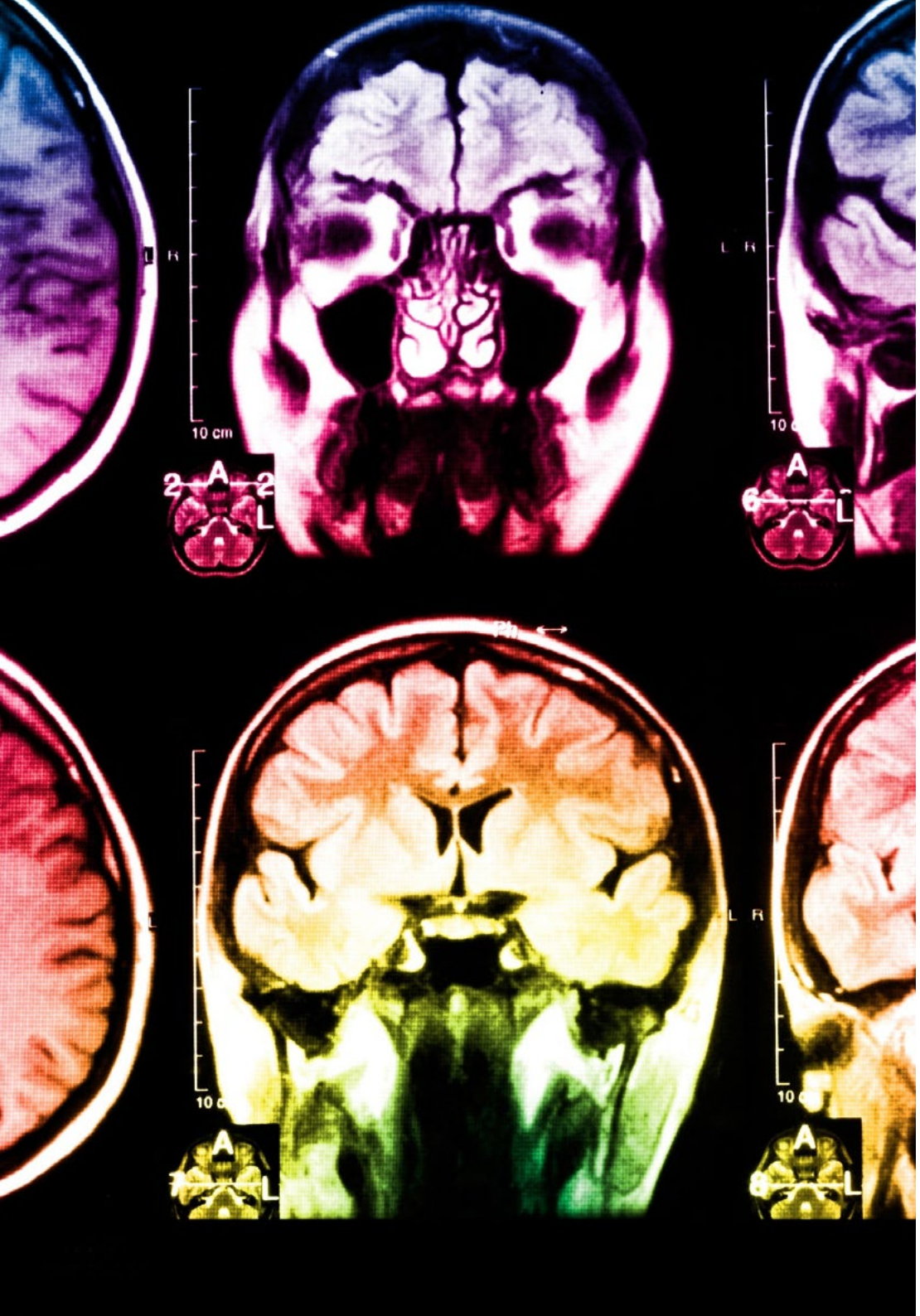
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

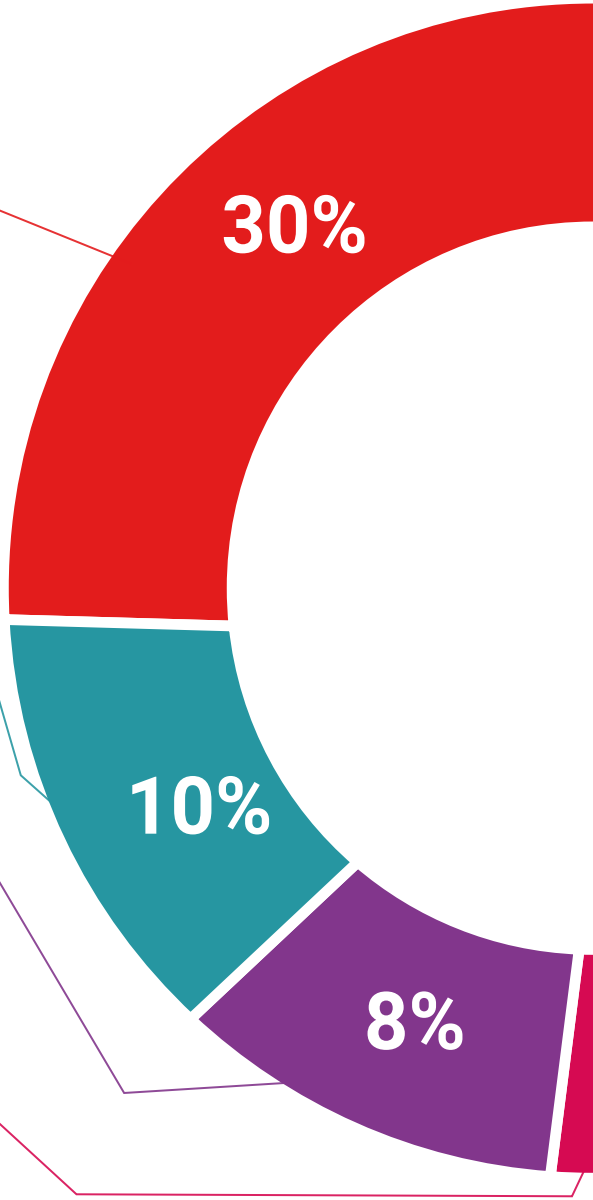
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

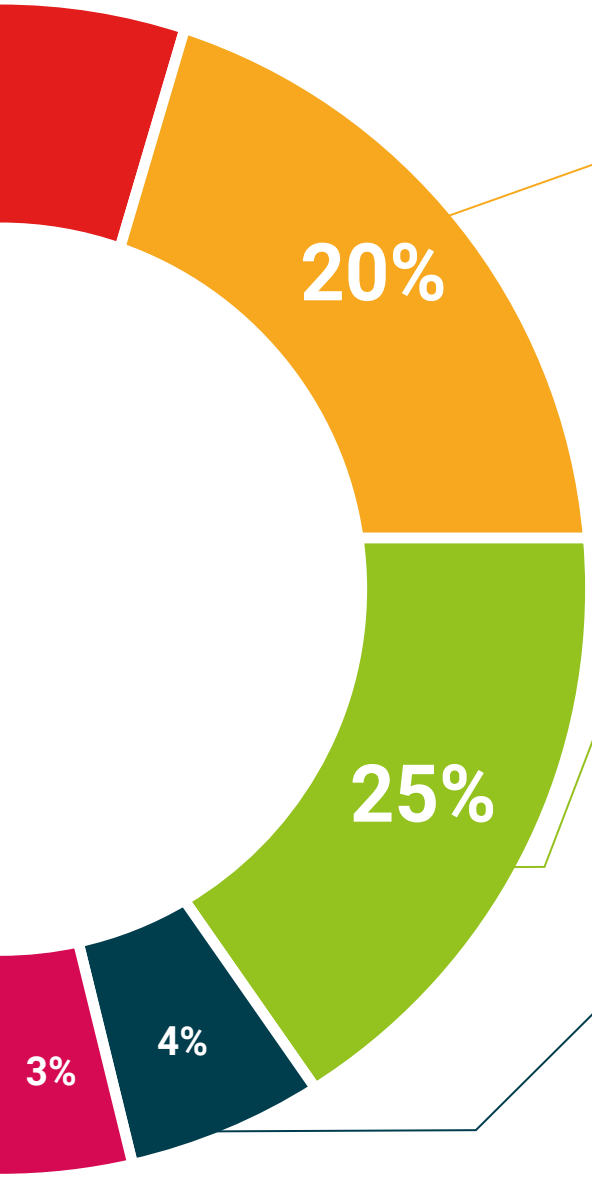
Practising Skills and Abilities

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 Development Programming guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Development Programming** 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 Development Programming**

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 Development Programming

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.

tech technological university

Postgraduate Diploma

Mobile Application Development Programming

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

Postgraduate Diploma

Mobile Application Development Programming

tech technological university