Postgraduate Certificate

Application Development in Python

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Postgraduate Certificate
Application Development in Python

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

Website: www.techtitute.com/us/information-technology/postgraduate-certificate/application-development-python

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01

Introduction

Testing and *Debugging* allows programmers to identify bugs in the code (such as logic, syntax or performance errors) before the application is used by end users. This is crucial for delivering high-quality products that meet the needs of consumers. However, these processes can be challenging. Among the main challenges is the creation of comprehensive test cases. Therefore, specialists must ensure that they cover all possible routes through the codes. To help them with this task, TECH is developing a university program that will provide the most innovative *Debugging* techniques. In addition, it is based on a 100% online methodology that adapts to the schedules of busy professionals.

You will apply the techniques of code optimization and efficient resource management thanks to this 100% online program"

Application Development in Python offers multiple advantages, which make it an attractive choice for both developers and companies. For example, this programming language stands out for its simple and readable syntax. This makes it significantly easier to write and maintain code, which leads to less error-prone code. This also leads to a shorter development cycle, as well as higher productivity for developers. Hence the importance of experts mastering this language, in order to take advantage of the job opportunities offered by this IT sector.

In this context, TECH is launching a pioneering study that will comprehensively address Application Development in Python. The academic itinerary will delve into the management of dependencies or libraries, handling packages with Pip and optimizing virtual environments. At the same time, the syllabus will provide advanced deployment strategies for deploying applications in a production environment. In accordance with this, the program will delve into the management of the software life cycle, taking into account tactics oriented to its maintenance and refactoring. Graduates will gain a comprehensive vision in this field to make a quality leap in their careers, offering solutions characterized by both innovation and creativity.

One of the advantages of being part of this unique academic opportunity is based on the convenience and adaptability provided. TECH is a pioneer in the implementation of the *Relearning*pedagogical methodology, which provides didactic and multimedia content repeatedly to expand and improve the assimilation of concepts. All of this is complemented with case studies refuted by the best experts in the field. It is therefore the perfect opportunity to combine learning with personal life.

This **Postgraduate Certificate in Application Development in Python** 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 Python Development
- The graphic, schematic and practical contents of the book provide theoretical and practical information on those disciplines that are essential for professional practice
- Practical exercises where the self-assessment process can be carried out to improve learning
- Its special emphasis on innovative methodologies
- 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 develop the most advanced testing strategies to verify the correct functioning of the software"

Thanks to the revolutionary Relearning methodology, you will integrate all the knowledge in an optimal way to successfully achieve the results you are looking for"

You will master the most effective tools for developing, optimizing and maintaining applications.

You will be prepared to successfully overcome real-world challenges in software development.

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

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

02

Objectives

Through this Postgraduate Certificate, graduates will obtain the necessary tools to develop, optimize and maintain applications in Python. This will allow them to be prepared to successfully face real challenges in the field of software development. At the same time, students will develop effective tests to guarantee the security of the systems. At the same time, students will develop effective tests to guarantee the security of the systems. In this way, experts will be able to take advantage of the numerous opportunities offered by a booming IT industry.

A complete and cutting-edge program that will allow you to advance progressively, from the comfort of your own home"

General Objectives

- Provide a comprehensive understanding of Python
- Enable advanced data and type handling in Python
- Apply the principles of Object Oriented Programming (OOP) in Python
- Encourage the use of best practices and modern methodologies in software development
- Provide comprehensive education in web and mobile development with Python
- Integrate UI/UX principles in software development
- Teach the configuration and use of data development tools and environments
- Delve into the use of data structures and functions in Python
- Learn advanced data visualization techniques with Matplotlib
- Learn performance optimization and data warehousing strategies

Specific Objectives

- Specialize in the design and advanced modeling of applications.
- Learn how to optimize, deploy and maintain applications.

Study through innovative multimedia didactic formats that will optimize your updating process"

03

Course Management

In order to provide the highest education for all, TECH stands out for having an extensive and renowned group of experts in Application Development in Python, which ensure an updated and functional learning that conforms this program. These professionals in charge of directing this program have a recognized work experience, as well as have excelled in projects of nationally and internationally recognized companies. All this is a guarantee for the graduate who wishes to obtain an advanced education from the best.

The main experts in Application Development in Python have joined forces to share with you all their knowledge in this field"

Management

Mr. Matos Rodríguez, Dionis

- *Data Engineer* at Wide Agency Sadexo
- *Data Consultant* at Tokiota
- *Data Engineer* at Devoteam
- *BI Developer* at Ibermática
- *Applications Engineer* at Johnson Controls
- *Database Developer* at Suncapital España
- *Senior Web Developer* at Deadlock Solutions
- *QA Analyst* at Metaconxept
- Professional Master's Degree in *Big Data* & *Analytics* by the EAE Business School
- Professional Master's Degree in Systems Analysis and Design
- Bachelor's Degree in Computer Engineering from APEC University

Professors

Ms. Delgado Feliz, Benedit

- Administrative Assistant and Electronic Surveillance Operator for the National Drug Control Directorate (DNCD)
- Customer Service at Cáceres y Equipos
- Claims and Customer Service at Express Parcel Services (EPS)
- Microsoft Office Specialist at the National School of Informatics (Escuela Nacional de Informática)
- Social Communicator from the Catholic University of Santo Domingo

Ms. Gil Contreras, Milagros

- *Content Creator* at MPCTech LLC
- Project Manager
- *Freelance IT Writer*
- MBA from the Complutense University of Madrid
- Degree/Graduate in Business Administration from the Technological Institute of Santo Domingo

Mr. Villar Valor, Javier

- Director and Founding Partner of Impulsa2
- *Chief Operations Officer* (COO) at Summa Insurance Brokers
- Director of Transformation and Operational Excellence at Johnson Controls
- Professional Masters Degree in Professional *Coaching*
- Executive MBA from Emlyon Business School, France
- Professional Master's Degree in Quality Management from EOI, Spain
- Computer Engineering from the University Action Pro-Education and Culture (UNAPEC)

MrGil Contreras, Armando

- Lead *Big Data Scientist* at Jhonson Controls
- *Data Scientist-Big Data* at Opensistemas S.A
- Fund Auditor at Creatividad y Tecnología S.A. (CYTSA)
- Public Sector Auditor at PricewaterhouseCoopers Auditores
- Professional Master's Degree in *Data Science* at University Center of Technology and Art
- Professional Máster Degree MBA in International Relations and Business from the Center for Financial Studies (CEF)
- Bachelor's Degree in Economics from the Technological Institute of Santo Domingo

Mr. Delgado Panadero, Ángel

- *ML Engenieer* at Paradigma Digital
- *Computer Vision Engineer* at NTT Disruption
- *Data Scientist* at Singular People
- *Data Analyst* at Parclick
- Specialist in *Data Engineering on GPC*
- Specialist in *Deep Learning*
- Degree in Physics at the University of Salamanca

Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

04

Structure and Content

This academic pathway will optimize the graduates' practices in the comprehensive development of Python applications. To this end, the syllabus will cover everything from application architecture to software design. The syllabus will delve into application modeling using both UML and diagrams. In this way, students will apply SOLID principles to create cleaner and more maintainable code. In addition, the course materials will provide the most advanced *testing*strategies to ensure program security. In addition, you will delve into aspects such as application deployment and distribution, using containers.

You will handle innovative techniques to ensure both security and authentication in Python"

Module 1. Application Development in Python

1.1. Python Application Architecture
- 1.1.1. Software Design
- 1.1.2. Common Architectural Patterns
- 1.1.3. Requirements and Needs Assessment

1.2. Design and Modeling of Python Applications
- 1.2.1. Use of UML and Diagrams
- 1.2.2. Modeling Data and Information Flow
- 1.2.3. SOLID Principles and Modular Design

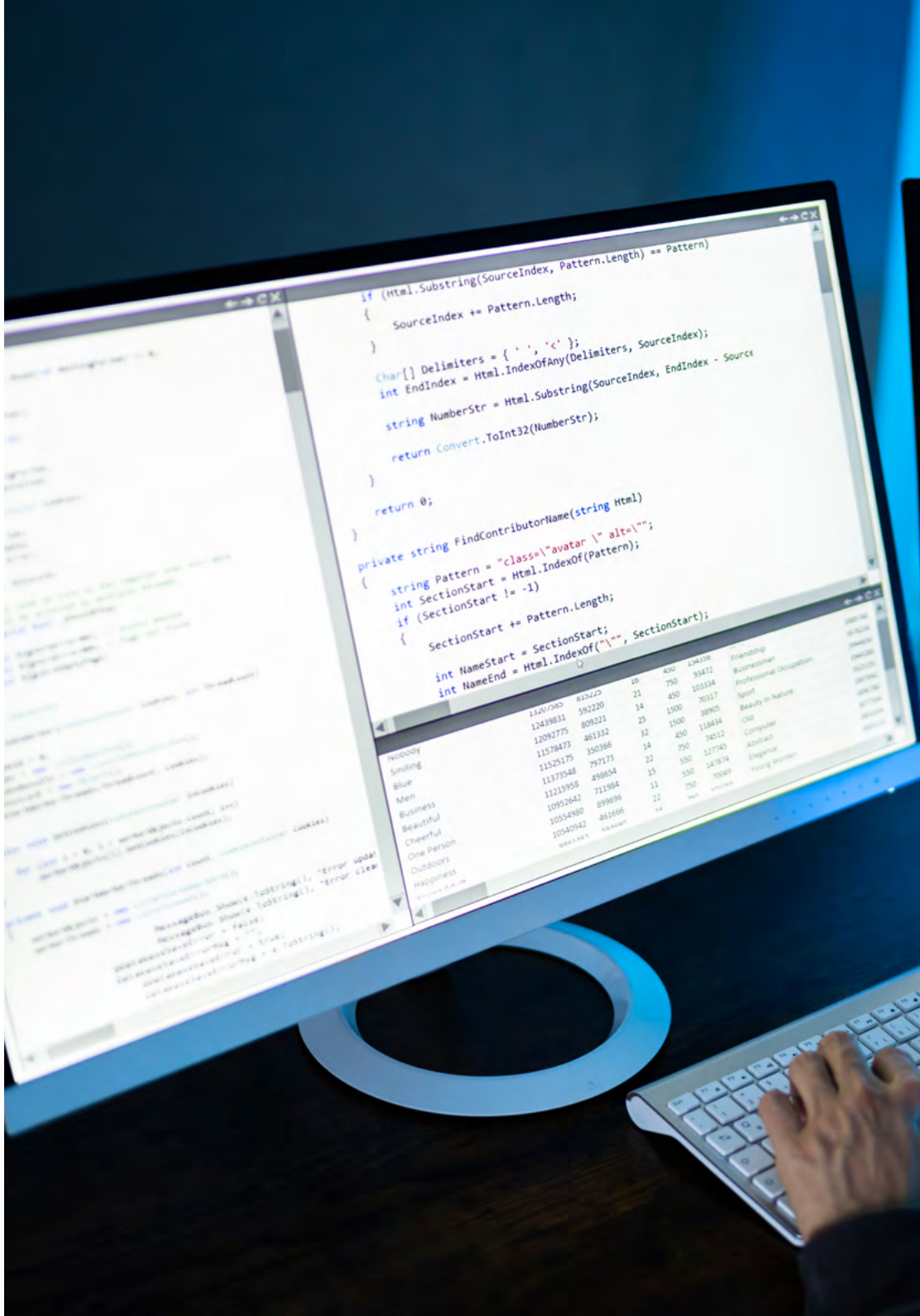
1.3. Dependency and Library Management in Python
- 1.3.1. Package Management with Pip
- 1.3.2. Use of Virtual Environments
- 1.3.3. Resolving Dependency Conflicts

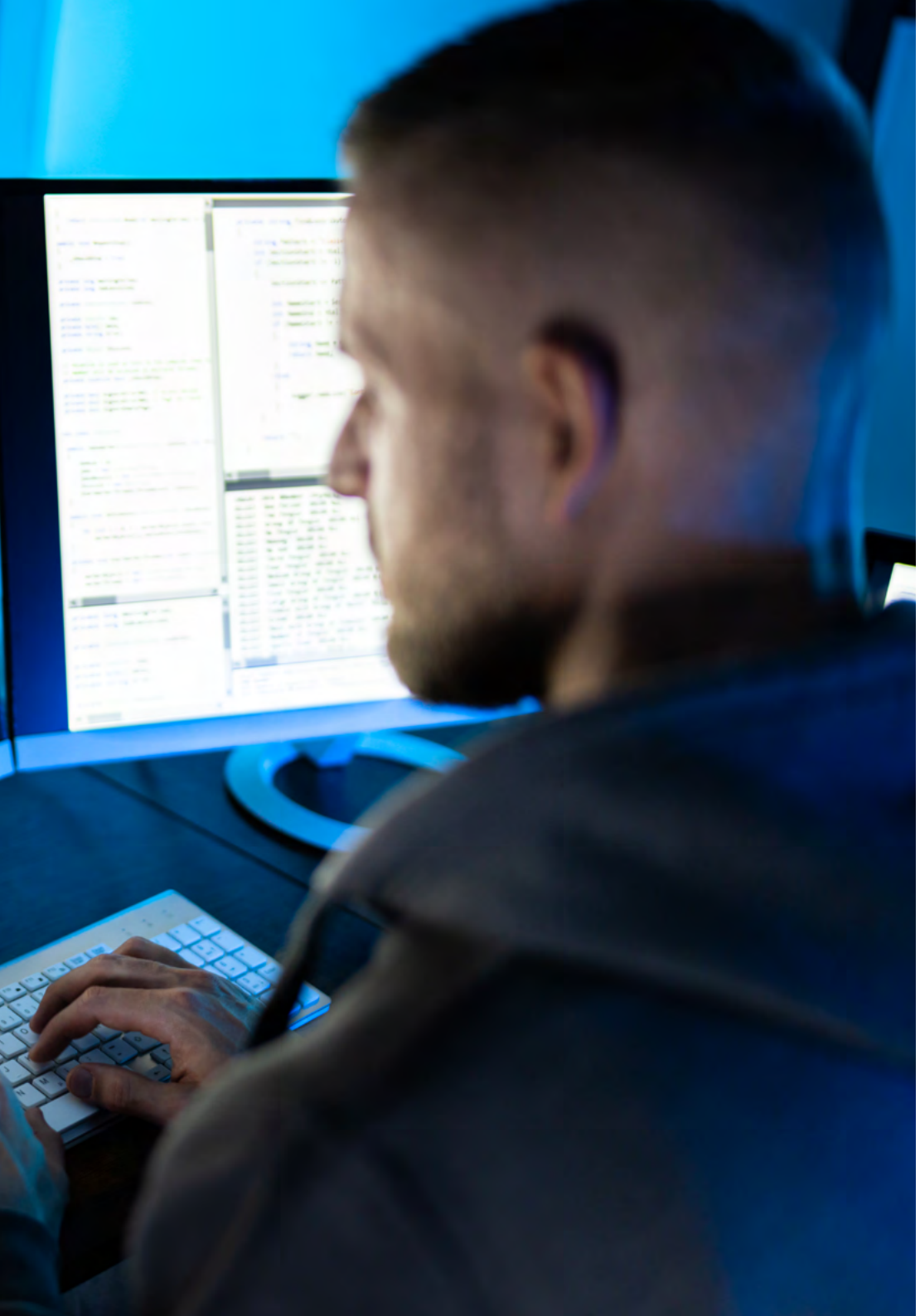
1.4. Design Patterns in Python Development
- 1.4.1. Creative, Structural and Behavioral Patterns
- 1.4.2. Practical Application of Patterns
- 1.4.3. Refactoring and Patterns

1.5. Testing and *Debugging* in Python Applications
- 1.5.1. *Testing* Strategies (Unitary, Integration)
- 1.5.2. Use of Testing *Frameworks*
- 1.5.3. *Debugging* Techniques and Tools

1.6. Security and Authentication in Python
- 1.6.1. Application Security
- 1.6.2. Implementation of Authentication and Authorization
- 1.6.3. Vulnerability Prevention

1.7. Optimization and Performance of Python Applications
- 1.7.1. Performance Analysis
- 1.7.2. Code Optimization Techniques
- 1.7.3. Efficient Resource and Data Management





1.8. Deployment and Distribution of Python Applications
- 1.8.1. Deployment Strategies
- 1.8.2. Use of Containers and Orchestrators
- 1.8.3. Distribution and Continuous Updates

1.9. Maintenance and Updating in Python
- 1.9.1. Software Lifecycle Management
- 1.9.2. Maintenance and Refactoring Strategies
- 1.9.3. System Upgrade and Migration

1.10. Documentation and Technical Support in Python
- 1.10.1. Creating Effective Documentation
- 1.10.2. Documentation Tools
- 1.10.3. Strategies for Supporting and Communicating with Users

An academic institution that adapts to you and designs a program that will allow you to reconcile your daily activities with a quality program"

04

Methodology

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

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

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

Case Study to contextualize all content

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

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

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

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

A learning method that is different and innovative

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

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

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

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

Relearning Methodology

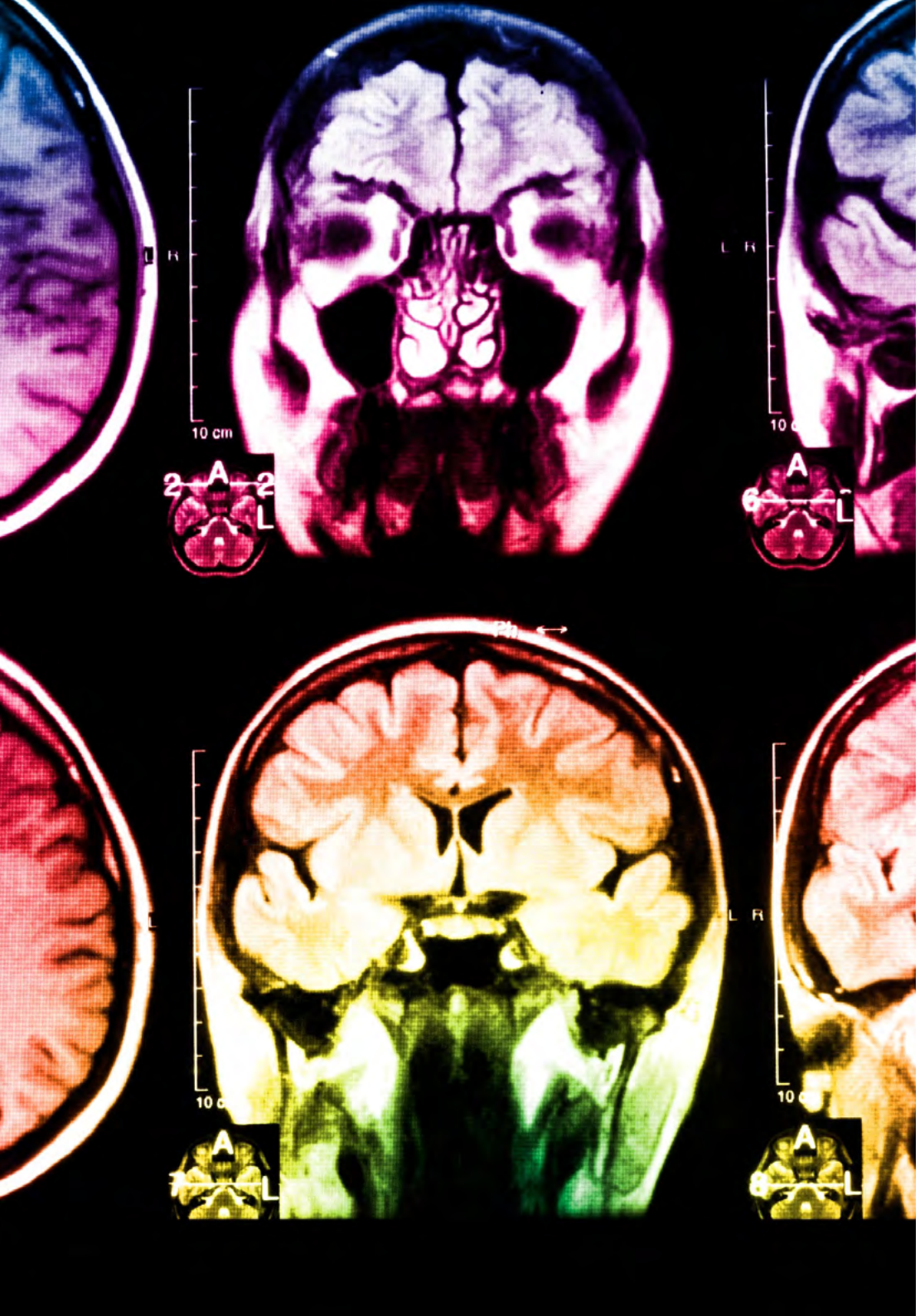
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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

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

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

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



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

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

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

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

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

Study Material

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

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

Classes

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

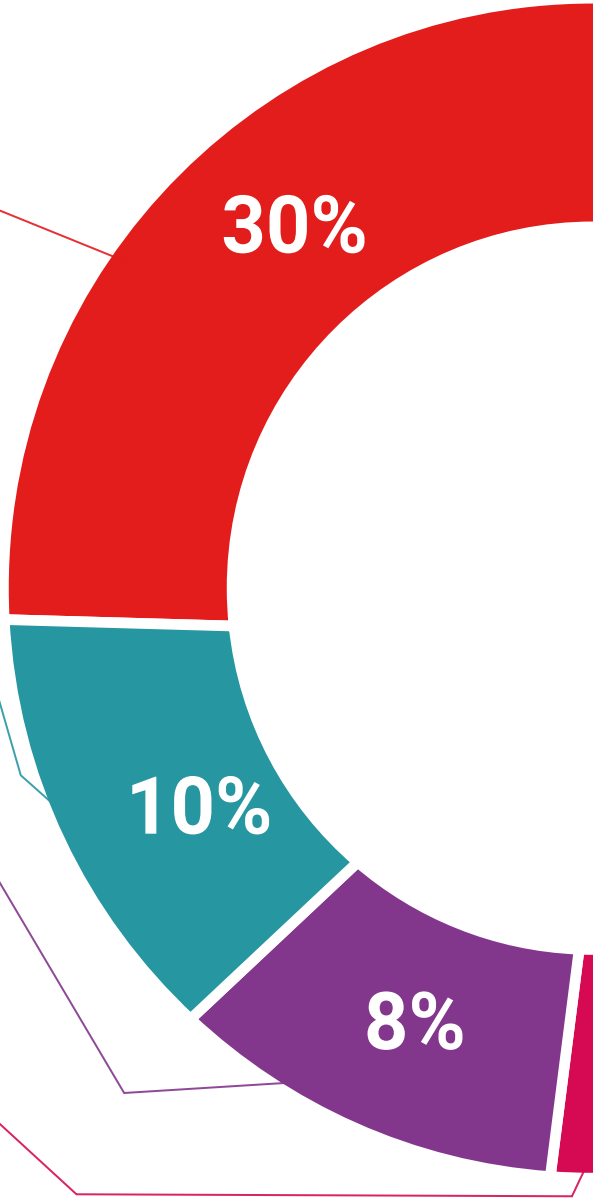
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

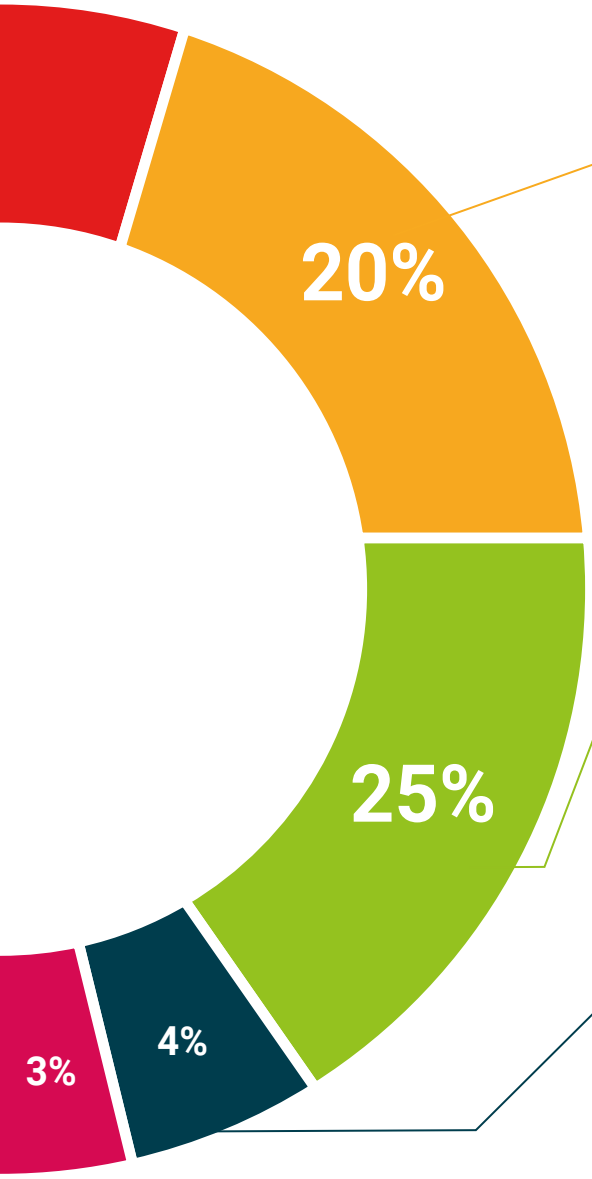
Practising Skills and Abilities

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

Additional Reading

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





Case Studies

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

Interactive Summaries

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

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

Testing & Retesting

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

06

Certificate

The Postgraduate Certificate in Application Development in Python guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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 Certificate in Application Development in Python** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Certificate in Application Development in Python**

Official Nº of Hours: **150 h.**


tech technological university

Awards the following

DIPLOMA

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Application Development in Python

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

Unique TECH Code: AFWORD23S techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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