Postgraduate Certificate
Python Programming

tech technological university

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Postgraduate Certificate
Python Programming

- 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/python-programming

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01

Introduction

Running *scripts* in Python has many benefits for IT professionals, not least of which is the automation of repetitive tasks. Professionals can write a script that automatically performs actions such as downloading files or sending emails. However, these procedures can pose a number of challenges for experts, especially in more advanced development environments. For example, scripts can be vulnerable to security attacks if not properly implemented. For that reason, TECH is developing a university diploma that will delve into the most advanced tools of Python Programming. In addition, it is based on a 100% online mode so that students have greater flexibility.

You will develop advanced skills in program flow control thanks to this 100% online program"

Python Programming is key for institutions due to its versatility, efficiency and ability to address a wide variety of business challenges. For example, its ease of use allows developers to write code more effectively. This helps to speed up software development and enables organizations to bring both their goods and services to market more quickly. In addition, this programming language can be used to analyze large data sets, which encourages decision making based on accurate information. To benefit from its advantages, experts need to update their knowledge frequently and keep abreast of developments in this field.

In order to help them with this task, TECH is creating a Postgraduate Certificate that will provide a comprehensive understanding of Python to optimize IT processes. The academic itinerary will address logical and arithmetic operations, emphasizing Boolean operators, conditional expressions and the evaluation of short circuits. At the same time, the syllabus will delve into the fundamentals of data, exploring primitive types (such as int, float or str), data conversion and data storage. As a result, graduates will acquire diverse skills to both configure and properly use the Python development environment.

In addition, thanks to the *Relearning*method, based on the continuous reiteration of key concepts, the graduates will not have to invest many hours of study and memorization, since with this system they will be able to consolidate them in a much easier way. A qualification that acquires a greater attraction by facilitating access to its content, conveniently whenever and wherever the students wish. And is that only need a digital device with an Internet connection (mobile, *Tablet* or computer), to view the agenda hosted on the virtual platform. Undoubtedly, a unique academic experience aimed at providing a real response to professionals in the IT field.

This **Postgraduate Certificate in Python 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 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 self-assessment can be used 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 use Python Strings to interact with users through standard input and output after this very comprehensive program"

You will delve into Error Handling and ensure that programs can run even when failures occur”

You will exercise in simulated environments, which will provide you with immersive learning programmed to prepare you for real situations.

You will reinforce your key knowledge through the innovative Relearning methodology for an effective assimilation of the subject.

The program’s teaching staff includes professionals from the field who contribute their work experience to this educational 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

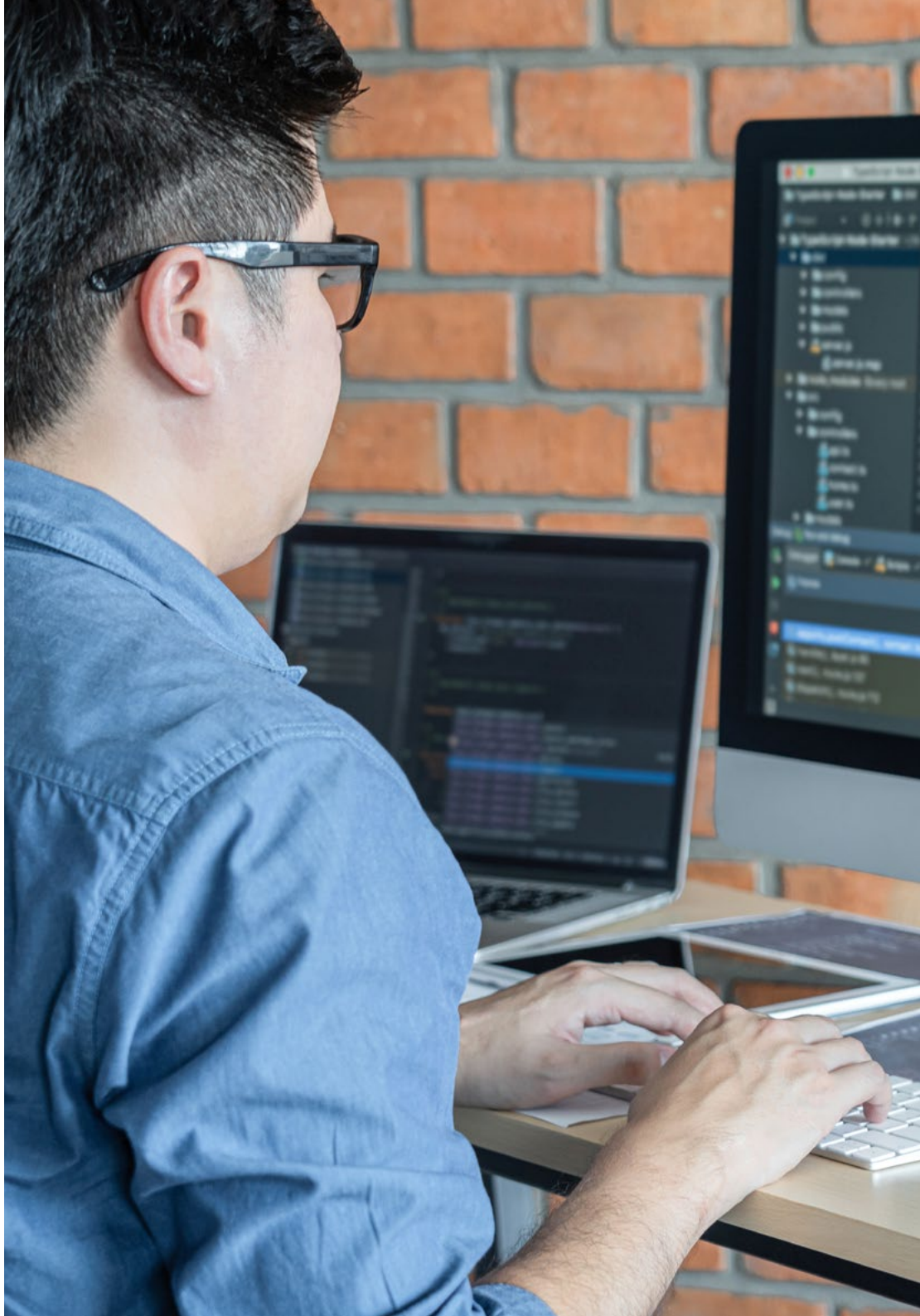
Objectives

This Postgraduate Certificate will provide graduates with the skills and knowledge necessary to program effectively in Python. Upon completion of the program, students will have mastered both the configuration and proper use of the development environment. In this way, computer scientists will be highly skilled in advanced data manipulation. Professionals will be prepared to successfully face the challenges they face.

A first class educational experience that will raise your professional horizons in only 150 hours"

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

- Enable the configuration and effective use of the Python development environment
- Understand advanced programming concepts

A unique, key, and decisive educational experience to boost your professional development"

03

Course Management

In order to offer the highest educational excellence, TECH has a renowned teaching team. These specialists have an extensive professional background, having been part of renowned IT businesses. In addition, they are characterized by a deep knowledge of Python programming, offering the most advanced technological resources in the IT field. In this way, the graduates will have the guarantees they need to update their competencies and acquire new skills to provide high quality services.

The teaching staff of this program has a wide experience in research and professional application in Python"

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

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)

Mr. Gil 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

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

Ms. Delgado Feliz, Benedit

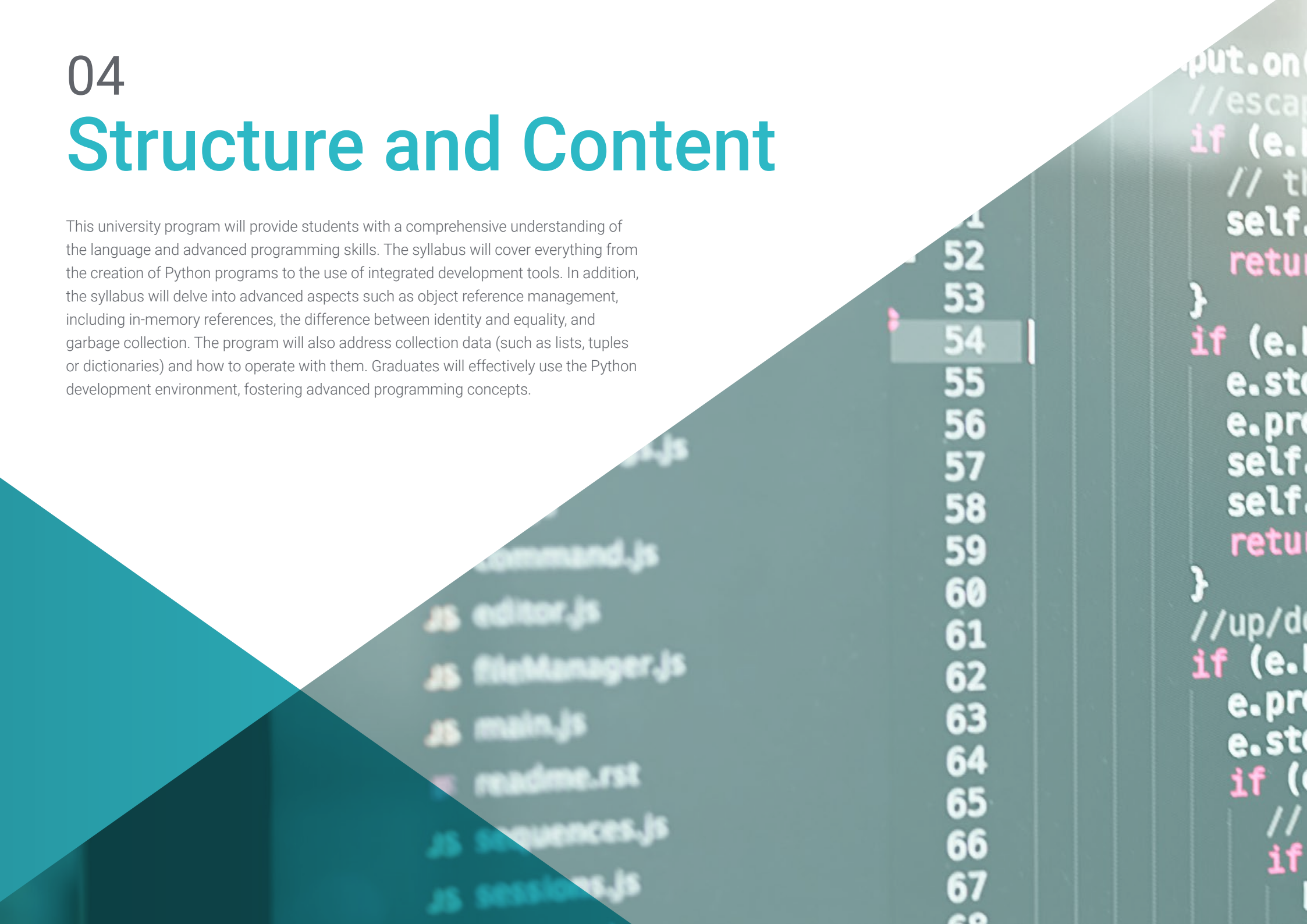
- Administrative Assistant and Electronic Surveillance Operator for the National Drug Control Directorate (DNCD)
- Customer Service at Cáceres y Equipos
- Claims and Customer Service at Express Parcel Services (EPS)
- Microsoft Office Specialist at the National School of Informatics (Escuela Nacional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

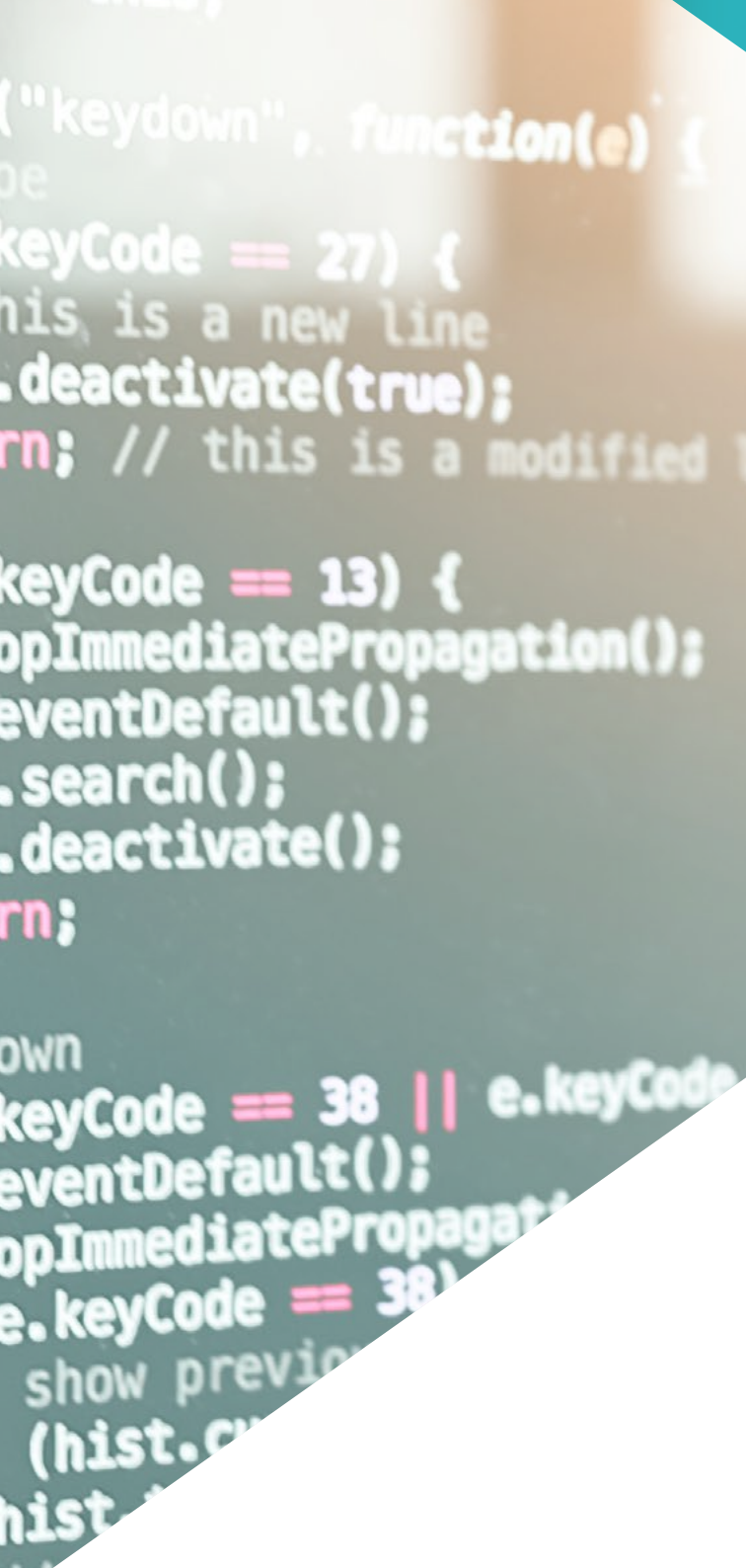
Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

04

Structure and Content

This university program will provide students with a comprehensive understanding of the language and advanced programming skills. The syllabus will cover everything from the creation of Python programs to the use of integrated development tools. In addition, the syllabus will delve into advanced aspects such as object reference management, including in-memory references, the difference between identity and equality, and garbage collection. The program will also address collection data (such as lists, tuples or dictionaries) and how to operate with them. Graduates will effectively use the Python development environment, fostering advanced programming concepts.





Increase your confidence in decision making by updating your knowledge through this revolutionary Postgraduate Certificate"

Module 1. Python Programming

1.1. Creation and Execution of Python Programs
- 1.1.1. Configuration of the Development Environment
- 1.1.2. Execution of Python Scripts
- 1.1.3. Integrated Development Tools (IDEs)

1.2. Data in Python
- 1.2.1. Primitive Types (int, float, str)
- 1.2.2. Conversion and Casting of Data Types in Python
- 1.2.3. Immutability and Data Storage in Python

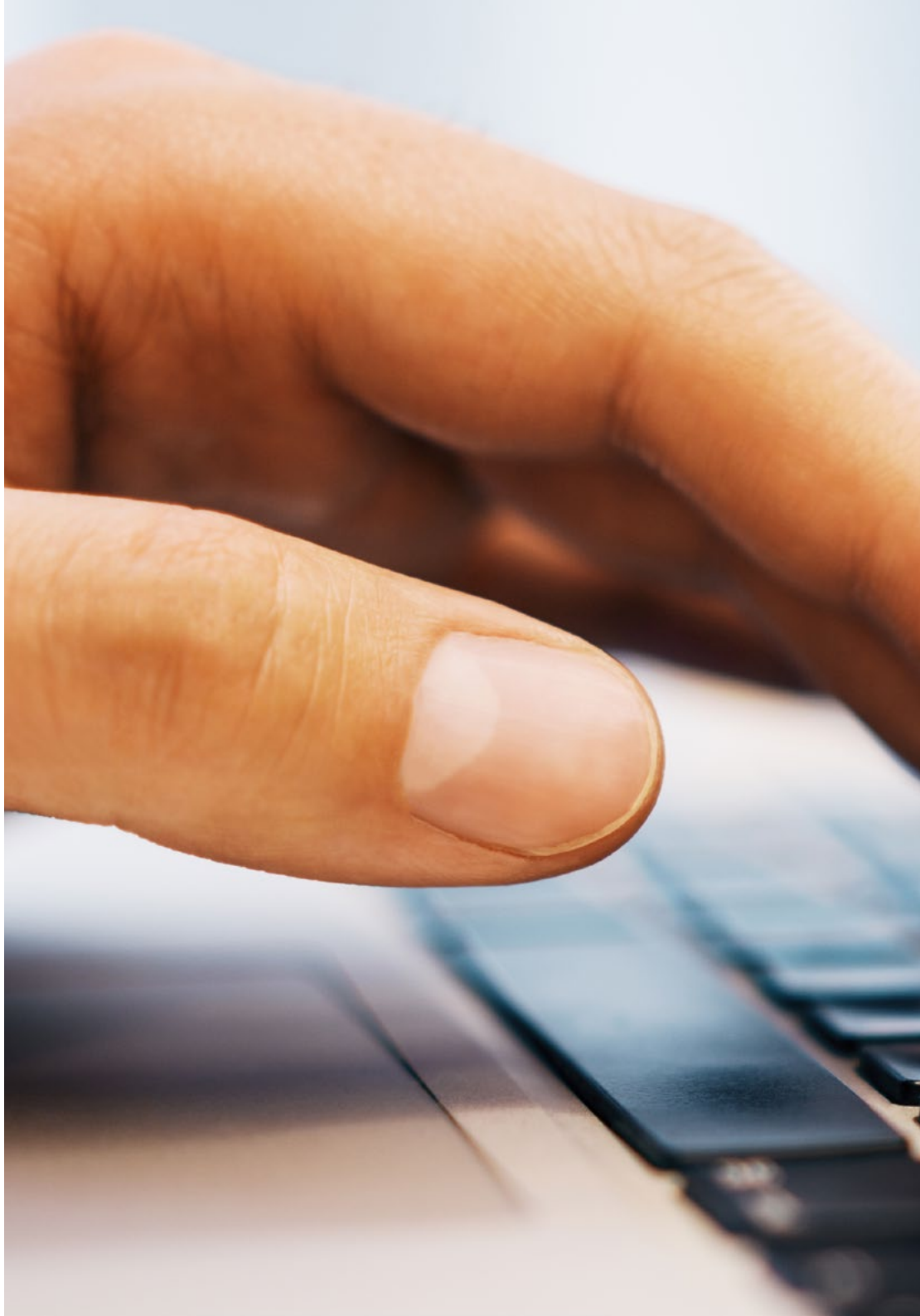
1.3. References to Objects in Python
- 1.3.1. References in Memory
- 1.3.2. Identity vs. Equality
- 1.3.3. Reference Management and Garbage Collection

1.4. Collection Data in Python
- 1.4.1. Common Lists and Operations
- 1.4.2. Tuples and their Immutability
- 1.4.3. Dictionaries and Data Access

1.5. Logical Operations in Python
- 1.5.1. Boolean Operators
- 1.5.2. Conditional Expressions
- 1.5.3. Short-Circuit Evaluation

1.6. Arithmetic Operators in Python
- 1.6.1. Arithmetic Operations in Python
- 1.6.2. Division Operators
- 1.6.3. Precedence and Associativity

1.7. Input/output in Python
- 1.7.1. Reading Data from Standard Input
- 1.7.2. Writing Data to Standard Output
- 1.7.3. File Handling



1.8. Creating and Calling Python Functions
- 1.8.1. Function Syntax
- 1.8.2. Parameters and Arguments
- 1.8.3. Return Values and Anonymous Functions

1.9. Using Strings in Python
- 1.9.1. Manipulating and Formatting Strings
- 1.9.2. Common Strings Methods
- 1.9.3. Interpolation and F-strings

1.10. Error and Exception Handling in Python
- 1.10.1. Common Types of Exceptions
- 1.10.2. Try-except Blocks
- 1.10.3. Creating Custom Exceptions

Acquire knowledge without geographical limitations or pre-established timing thanks to TECH. Don't wait any longer and enroll now"

05

Methodology

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

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

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

Case Study to contextualize all content

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

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

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

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

A learning method that is different and innovative

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

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

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

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

Relearning Methodology

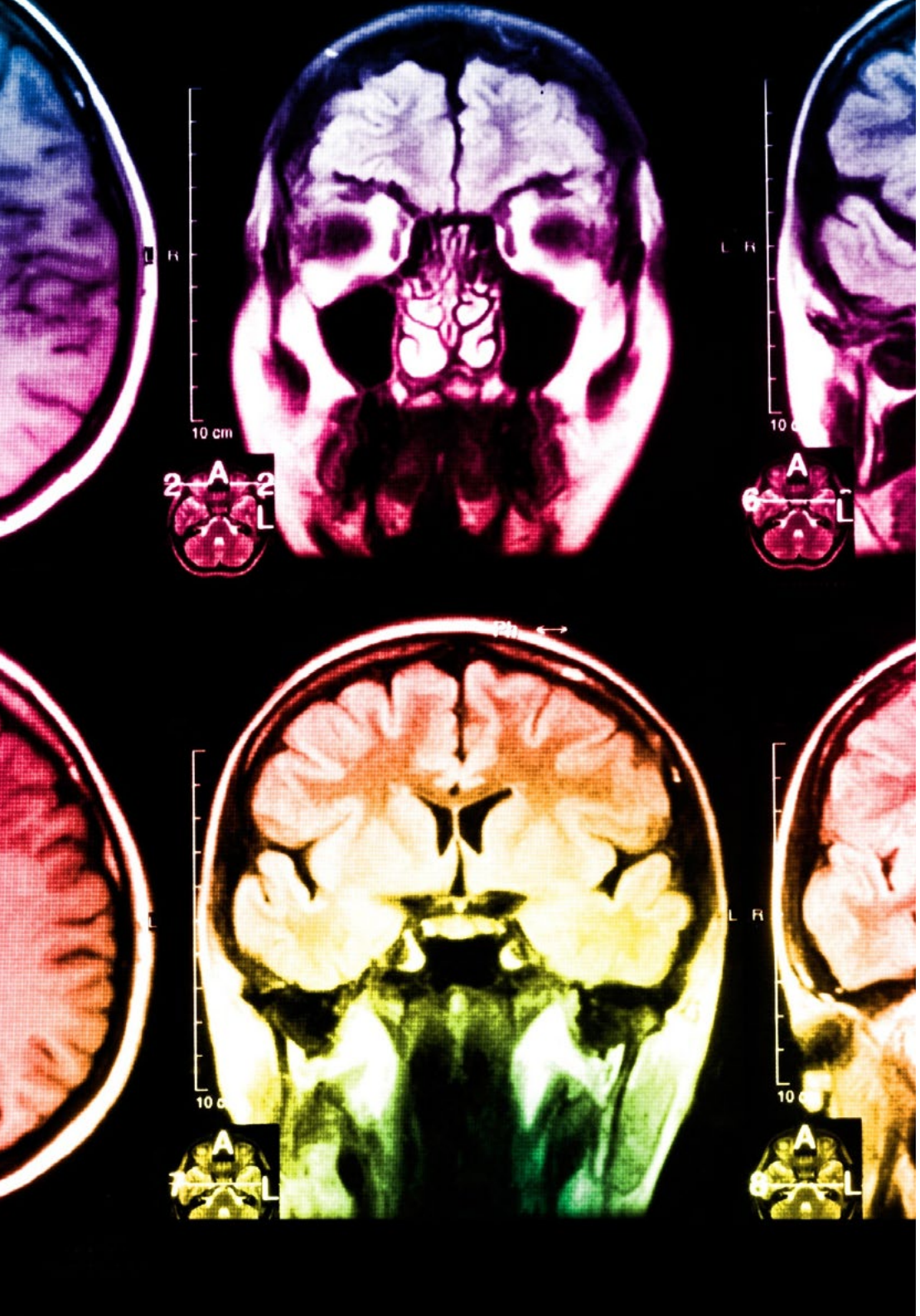
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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

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

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

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



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

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

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

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

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

Study Material

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

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

Classes

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

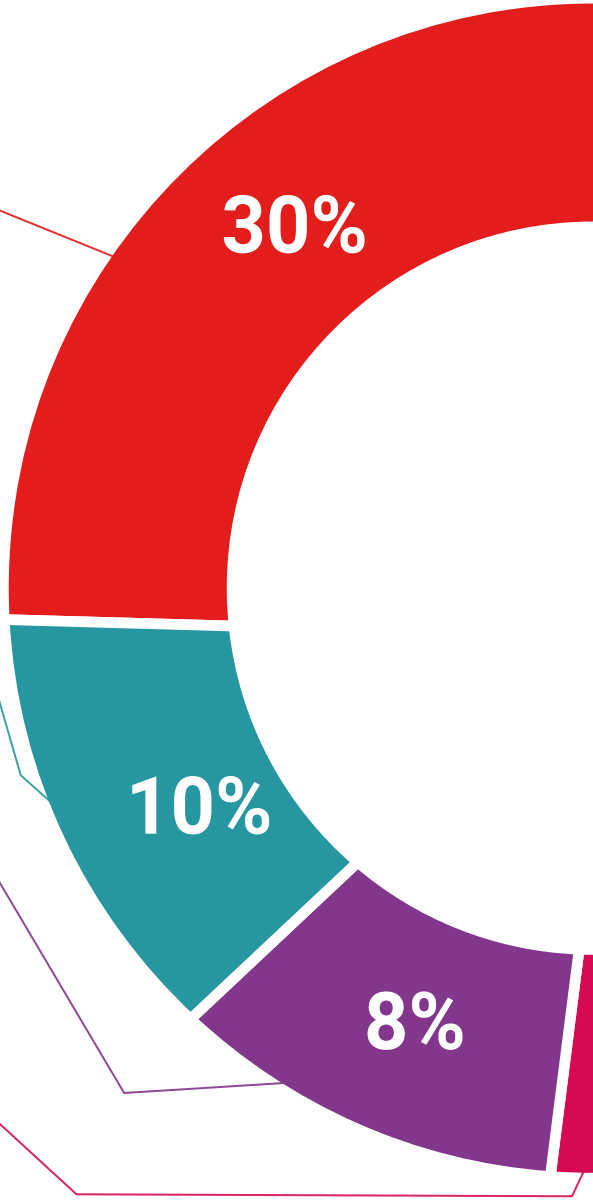
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

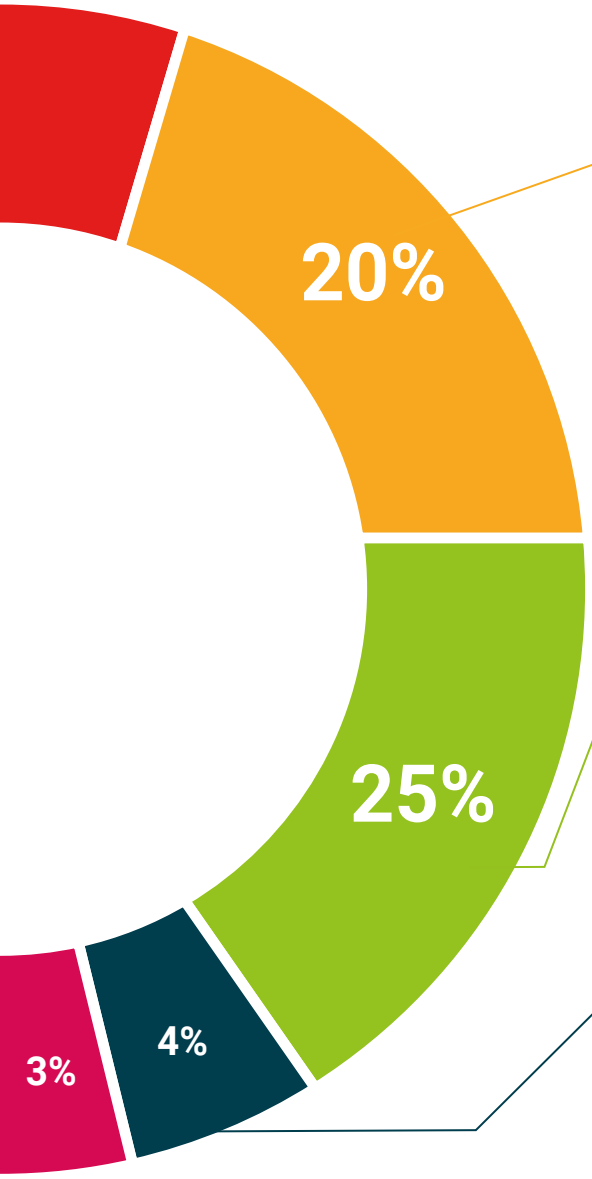
Practising Skills and Abilities

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

Additional Reading

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





Case Studies

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

Interactive Summaries

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

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

Testing & Retesting

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

06

Certificate

The Postgraduate Certificate in Python Programming 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 Python 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 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 Python Programming**

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

Python Programming

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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