Postgraduate Diploma

Application Development with Python

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Postgraduate Diploma
Application Development with Python

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

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

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01

Introduction

Application development with Python offers benefits that have contributed to its consolidation as one of the most popular and versatile programming languages. First, Python's clear and readable syntax makes it easy to write and maintain code, which speeds up the development process. In addition, the wide range of available libraries and frameworks provides developers with powerful tools to tackle a variety of tasks, from web development to data analysis and machine learning. Likewise, its versatility allows its use in a variety of contexts, from desktop applications to embedded systems and web development. For this reason, TECH has developed this comprehensive 100% online program, based on the innovative Relearningmethodology.

Python's portability and its compatibility with multiple platforms will ensure that the applications you develop will be highly accessible. Bet on TECH!"

Application development with Python makes it easier to write and maintain code, speeding up the development process, and provides a wide variety of libraries and frameworks. In fact, Python offers efficient solutions for common tasks, allowing developers to create robust and functional applications faster. That is why this language excels in web development, data analysis, Artificial Intelligence and more, covering diverse application domains.

This is how this Postgraduate Diploma in Application Development with Python was born, a complete immersion in the best practices and modern methodologies of software development. The program will cover everything from application architecture to advanced design and modeling, using UML and SOLID principles to ensure robust and scalable development. Graduates will learn to effectively manage testing and *debugging*, as well as to optimize application performance through advanced coding techniques and efficient resource management.

They will also focus on web and mobile development, using popular *frameworks* such as Django and Flask, learning how to design and implement APIs and web services. In addition, the course will delve into user interface and user experience (UI/UX) design with Python, from responsive and adaptive design to user behavior analysis. In this way, the program will provide computer scientists with the necessary tools and knowledge to develop, optimize and maintain applications in Python, preparing them to confidently face real challenges in the competitive world of software development.

TECH will give professionals a flexible qualification, with which they will have greater freedom to organize their moments of participation, facilitating the harmonization of their daily, personal or work commitments. This approach will be based on the innovative *Relearning*methodology, which involves constant repetition of key concepts to improve the assimilation of the contents.

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

- The development of case studies presented by experts in Application Development with Python
- The graphic, schematic and eminently 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

The Python language presents itself as an attractive choice for developers looking to create effective, high-performance applications. What are you waiting for to join the technological vanguard?"

You will delve into efficient test management and debugging, as well as optimization and performance strategies, including advanced coding techniques and efficient resource management"

Specialize in advanced design and modeling, using tools such as UML and SOLID principles, through the unique learning resources in this program.

You will master the use of frameworks, such as Django and Flask, including detailed instruction on design, implementation and security of RESTful APIs.

The program's teaching staff includes professionals from the industry 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

The main objective of this Postgraduate Diploma is to provide computer scientists with comprehensive and advanced education, which will allow them to stand out in the competitive world of software development. This academic program will cultivate specialized skills in the design and advanced modeling of applications, providing professionals with solid knowledge in the efficient management of testing, debugging and optimization strategies. In addition, web and mobile development using leading Frameworks , such as Django and Flask, will be analyzed in depth, while fostering the acquisition of essential competencies in user interface and user experience (UI/UX) design.

The Postgraduate Diploma in Application Development with Python presents itself as a strategic investment for those who aspire to excel at the forefront of technology and innovation"

General Objectives

- Encourage the use of best practices and modern methodologies in software development
- Become proficient in comprehensive Python application development
- Provide comprehensive education in web and mobile development with Python
- Master the design and management of web and mobile applications
- Integrate UI/UX principles in software development
- Master interface and user experience design using Python

TECH will be your springboard to professional success! This 100% online Postgraduate Diploma will provide you with advanced technical knowledge and the ability to face real challenges in application development"

Specific Objectives

Module 1. Application Development in Python

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

Module 2. Web and Mobile Development with Python

- Use popular Python web Frameworks
- Prepare for the development and publication of mobile applications
- Develop APIs and web services

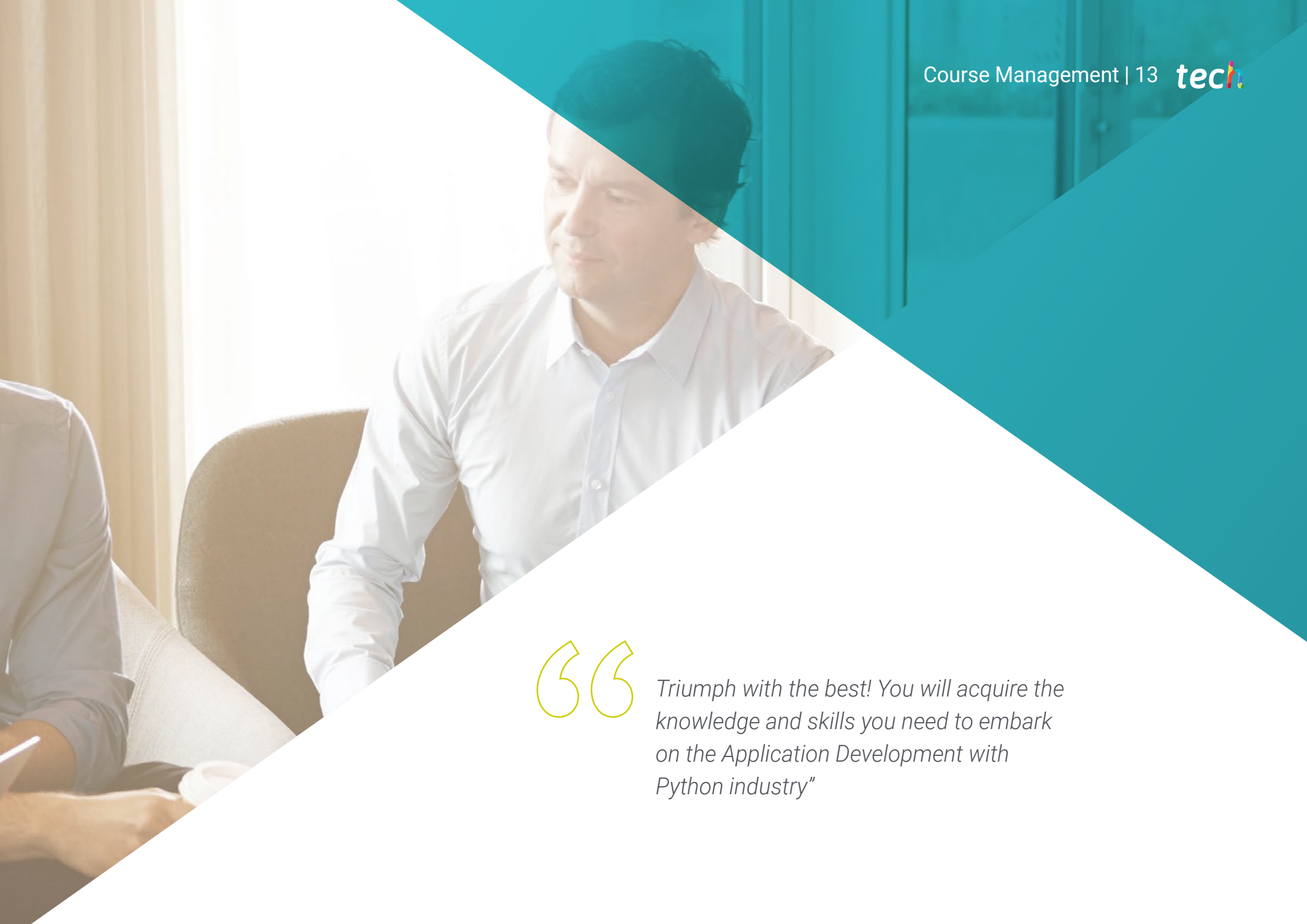
Module 3. User Interface and User Experience with Python

- Instruct in responsive and adaptive design techniques
- Prepare for usability testing and user behavior analysis
- Master the use of UI/UX design tools with Python

03

Course Management

The faculty is composed of highly qualified professionals, who not only possess in-depth technical knowledge in Application Development with Python, but also have vast industry experience. Their innovative pedagogical approach and ability to convey complex concepts in an accessible manner will ensure that graduates gain a thorough understanding of fundamental principles and advanced practices in application development. With an unwavering commitment to academic excellence, these faculty members are here to impart knowledge, inspire and nurture the professional growth of each student, preparing them to lead at the forefront of technology.



Triumph with the best! You will acquire the knowledge and skills you need to embark on the Application Development with Python industry"

Management

Dr. 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)

Mr. Gil Contreras, Armando

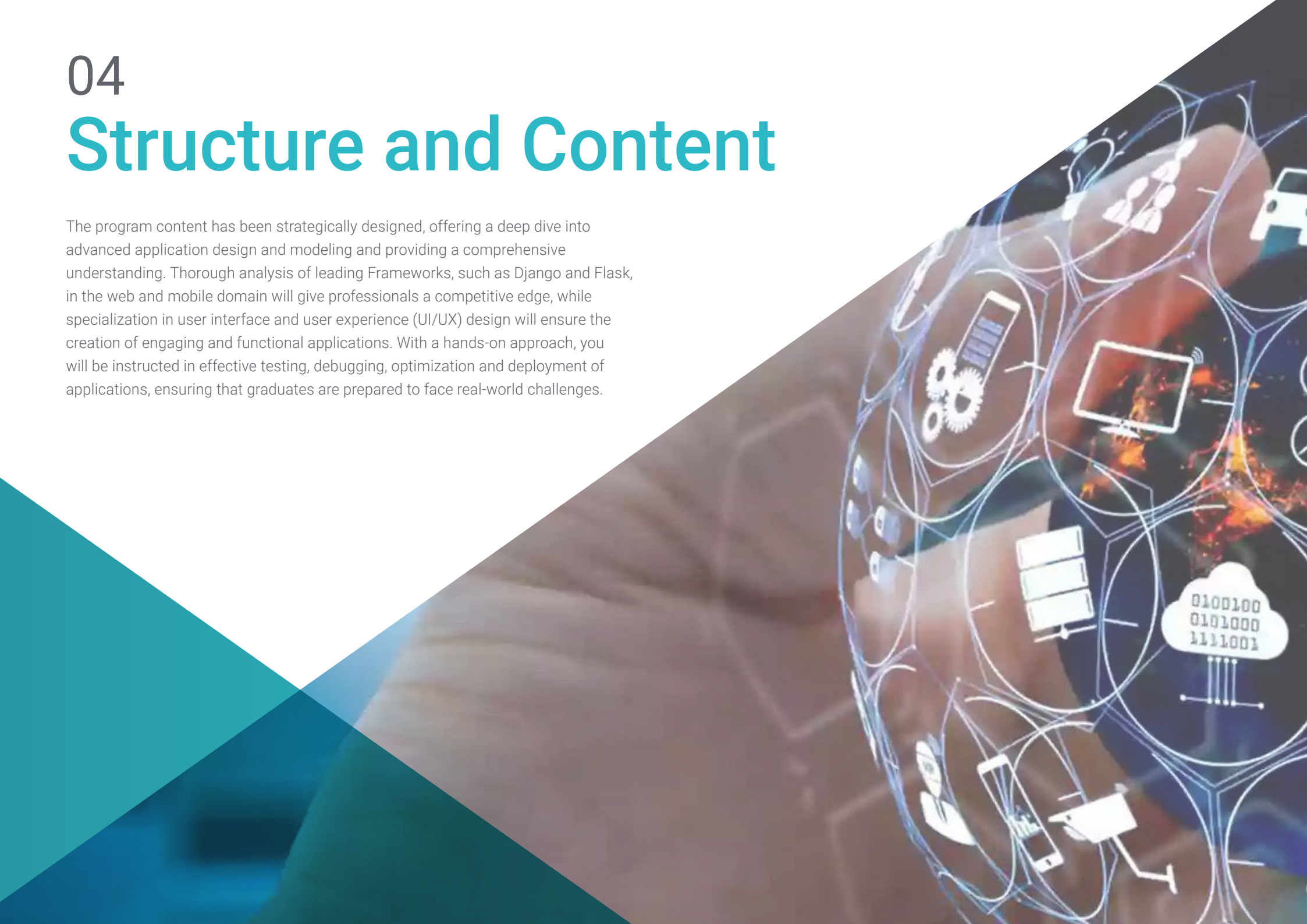
- Lead Big Data Scientist at Jhonson Controls
- Data Scientist-Big Data at Opensistemas S.A
- Fund Auditor at Creatividad y Tecnología S.A. (CYTSA)
- Public Sector Auditor at PricewaterhouseCoopers Auditores
- Professional Master's Degree in Data Science at University Center of Technology and Art
- Professional 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

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

The program content has been strategically designed, offering a deep dive into advanced application design and modeling and providing a comprehensive understanding. Thorough analysis of leading Frameworks, such as Django and Flask, in the web and mobile domain will give professionals a competitive edge, while specialization in user interface and user experience (UI/UX) design will ensure the creation of engaging and functional applications. With a hands-on approach, you will be instructed in effective testing, debugging, optimization and deployment of applications, ensuring that graduates are prepared to face real-world challenges.



You will delve into the essential fundamentals and the most advanced methodologies in software development, with a pragmatic approach and focus on the practical application of knowledge"

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

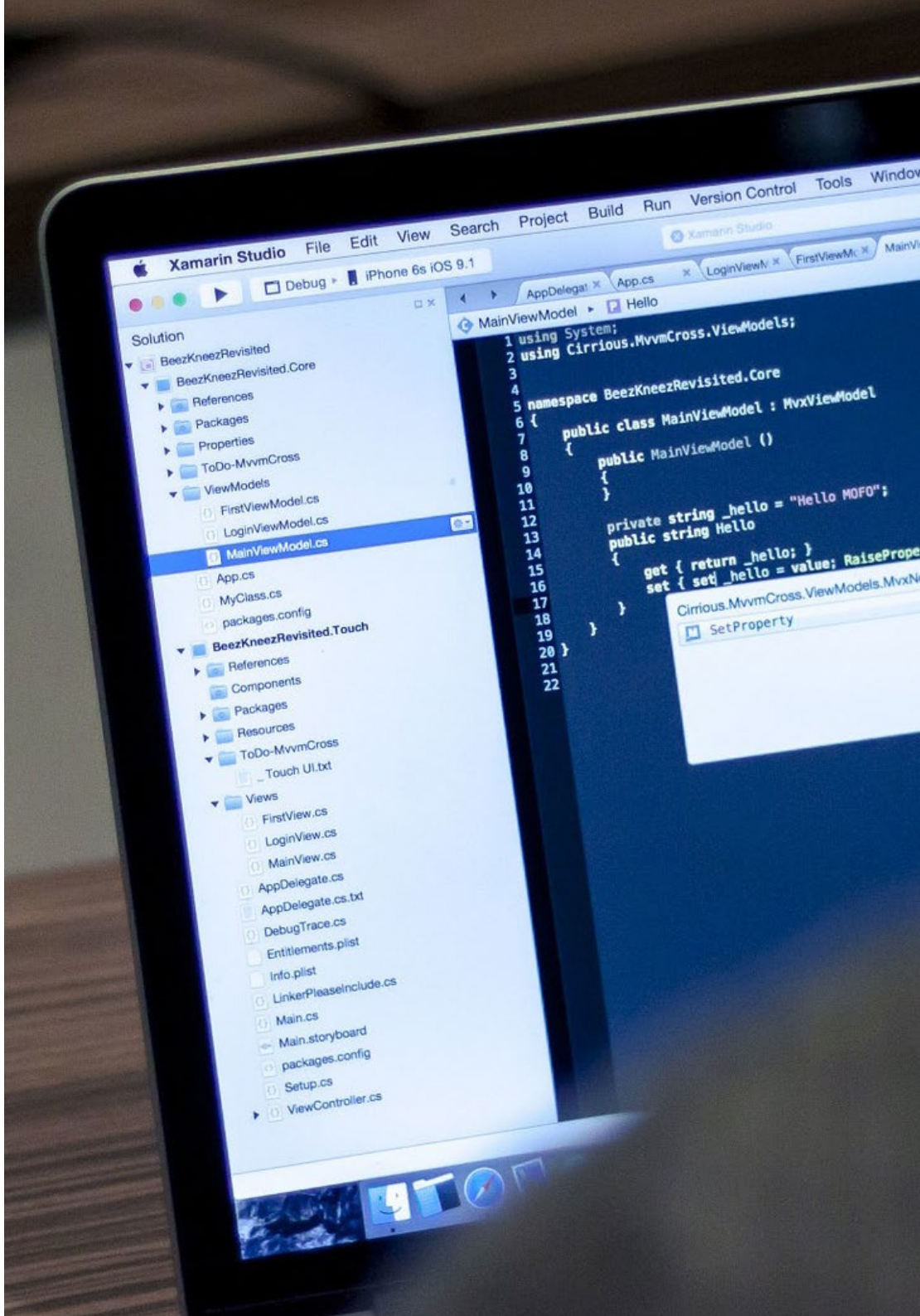
1.3. Dependency and Library Management in Python
- 1.3.1. Package Management with Pip
- 1.3.2. Use of Virtual Environments
- 1.3.3. Resolving Dependency Conflicts

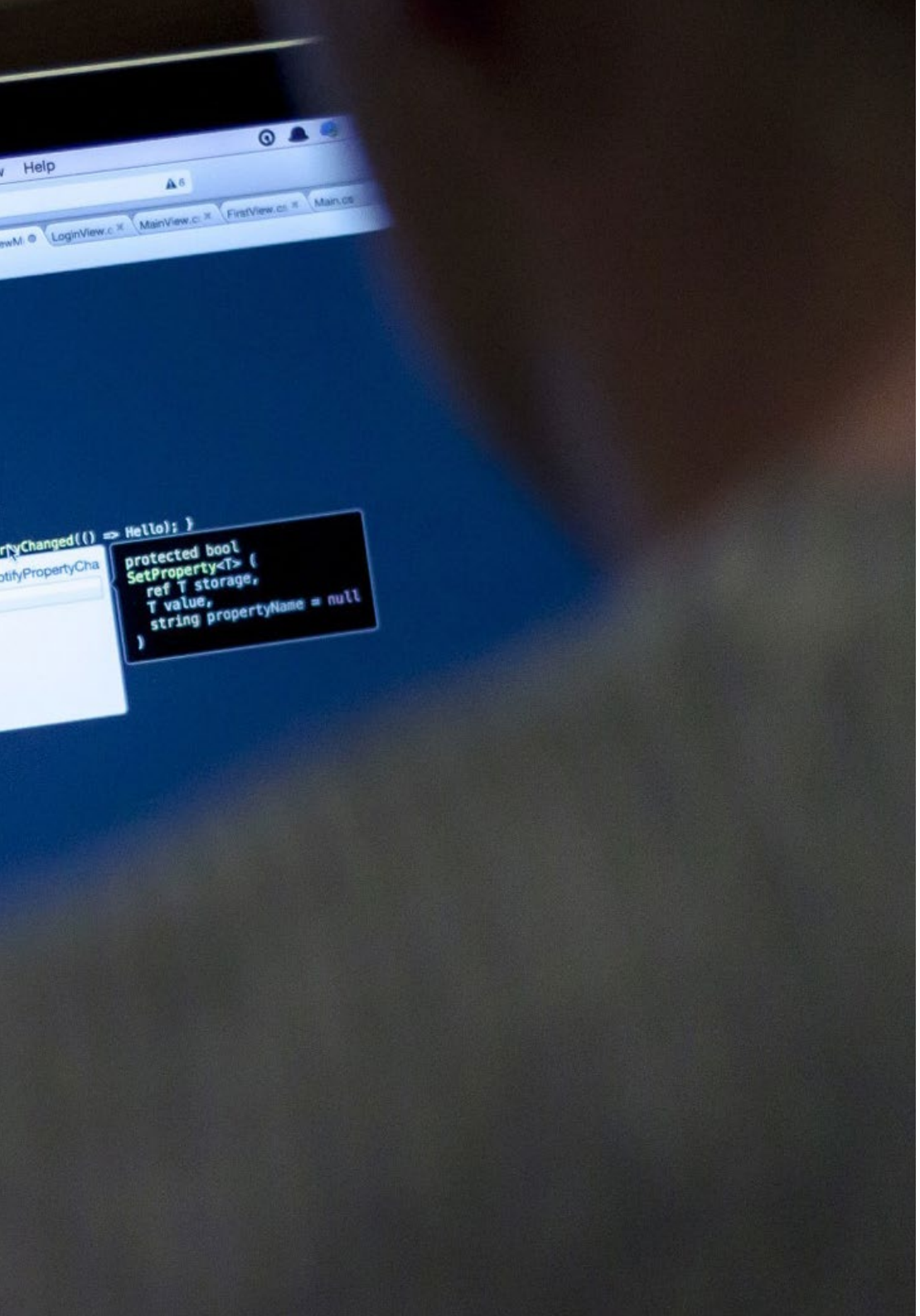
1.4. Design Patterns in Python Development
- 1.4.1. Creative, Structural and Behavioral Patterns
- 1.4.2. Practical Application of Patterns
- 1.4.3. Refactoring and Patterns

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

Module 2. Web and Mobile Development with Python

2.1. Web Development with Python
- 2.1.1. Structure and Components of a Website
- 2.1.2. Technologies in Web Development
- 2.1.3. Trends in Web Development

2.2. Popular Web Frameworks with Python
- 2.2.1. Django, Flask and Other Options
- 2.2.2. Frameworks Comparison and Selection
- 2.2.3. Frontend Integration

2.3. FrontEnd Development: HTML, CSS and JavaScript with Python
- 2.3.1. HTML and CSS
- 2.3.2. JavaScript and DOM Manipulation
- 2.3.3. Frameworks and Frontend Libraries

2.4. Backend and Databases with Python
- 2.4.1. Backend Development with Python
- 2.4.2. Relational and Non-relational Database Management
- 2.4.3. Backend-Frontend Integration

2.5. APIs and Web Services with Python
- 2.5.1. Designing RESTful APIs
- 2.5.2. Implementing and Documenting APIs
- 2.5.3. API Consumption and Security

2.6. Mobile Development with Python
- 2.6.1. Mobile Development Platforms (Native, Hybrid)
- 2.6.2. Development Tools and Environments
- 2.6.3. Adaptation of Applications for Mobile Devices

2.7. Mobile Development Platforms with Python
- 2.7.1. Android and IOS
- 2.7.2. Frameworks for Cross-development
- 2.7.3. Testing and Deployment on Mobile Devices

2.8. Design and UX in Mobile Applications with Python
- 2.8.1. Mobile Interface Design
- 2.8.2. Usability and User Experience with Python
- 2.8.3. Prototyping and Design Tools

2.9. Mobile Testing and Debugging with Python
- 2.9.1. Testing Strategies on Mobile Devices
- 2.9.2. Debugging and Monitoring Tools
- 2.9.3. Test automation

2.10. Publishing in Application Stores with Python
- 2.10.1. Publication Process in App Store and Google Play
- 2.10.2. Apps Compliance and Policies
- 2.10.3. Marketing and Promotion Strategies

Module 3. User Interface and User Experience with Python

3.1. User Interface Design with Python
- 3.1.1. UI Design with Python
- 3.1.2. User-computer Interaction with Python
- 3.1.3. User-centered Design with Python

3.2. UI/UX Design Tools with Python
- 3.2.1. Design and Prototyping Software
- 3.2.2. Collaboration and Feedback Tools
- 3.2.3. Integration of Design into the Development Process

3.3. Responsive and Adaptive Design with Python
- 3.3.1. Responsive Design Techniques
- 3.3.2. Adaptation to Different Devices and Screens
- 3.3.3. Testing and Quality Assurance

3.4. Animations and Transitions with Python
  3.4.1. Creating Effective Animations with Python
  3.4.2. Tools and Libraries for Animations
  3.4.3. Impact on UX and Performance
3.5. Accessibility and Usability with Python
  3.5.1. Web Accessibility
  3.5.2. Evaluation Tools and Techniques
  3.5.3. Implementation of Best Practices
3.6. Prototyping and Wireframes with Python
  3.6.1. Wireframes and Mockups Creation
  3.6.2. Rapid Prototyping Tools
  3.6.3. Usability Testing and Feedback
3.7. Usability Testing with Python
  3.7.1. Usability Testing Methods and Techniques
  3.7.2. Results-based Analysis and Improvements
  3.7.3. Usability Testing Tools
3.8. User Behavior Analysis with Python
  3.8.1. Analysis and Tracking Techniques
  3.8.2. Data Interpretation and Metrics
  3.8.3. Continuous Improvement Based on Data
3.9. Feedback-based Enhancements with Python
  3.9.1. Feedback Management and Analysis
  3.9.2. Feedback Cycles and Continuous Improvement
  3.9.3. Strategies for Implementing Effective Change
3.10. Future Trends in UI/UX with Python
  3.10.1. Innovations and Emerging Trends
  3.10.2. Impact of New Technologies on UI/UX
  3.10.3. Preparing for the Future of Design

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

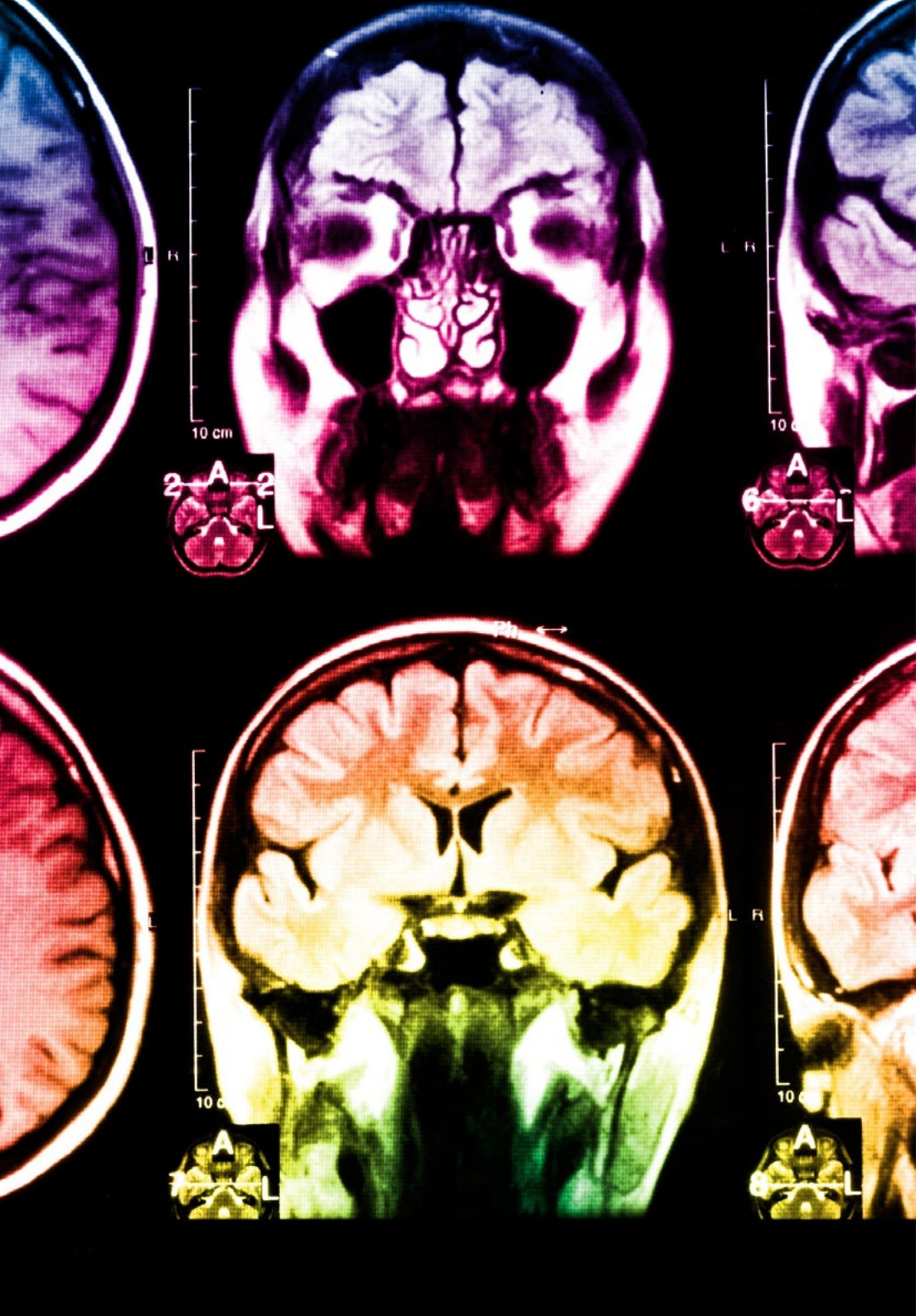
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

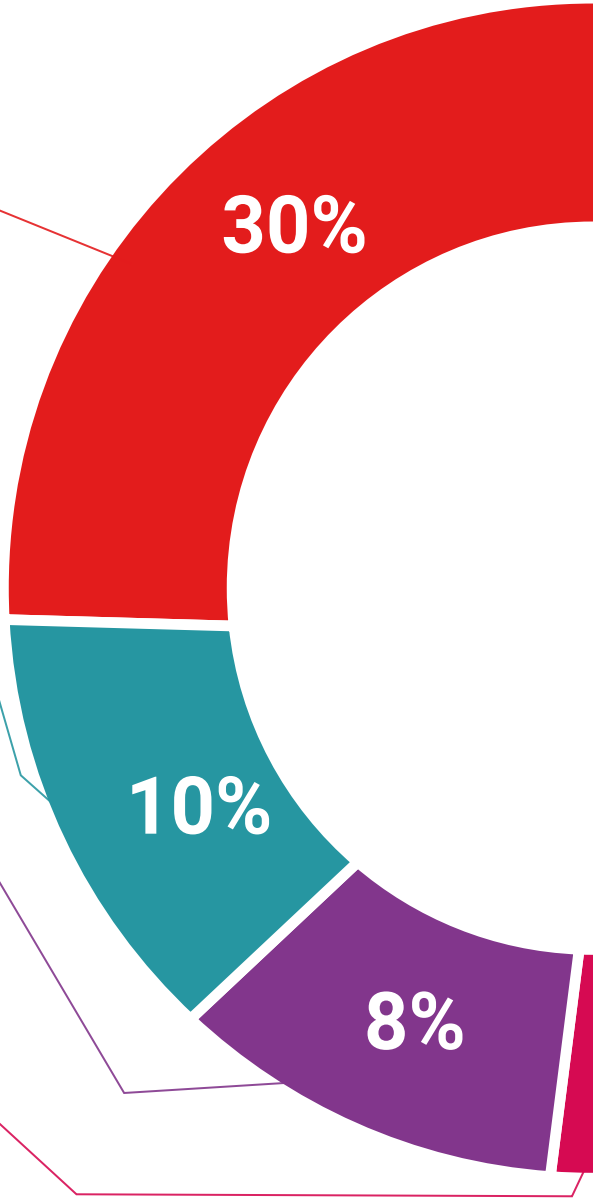
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

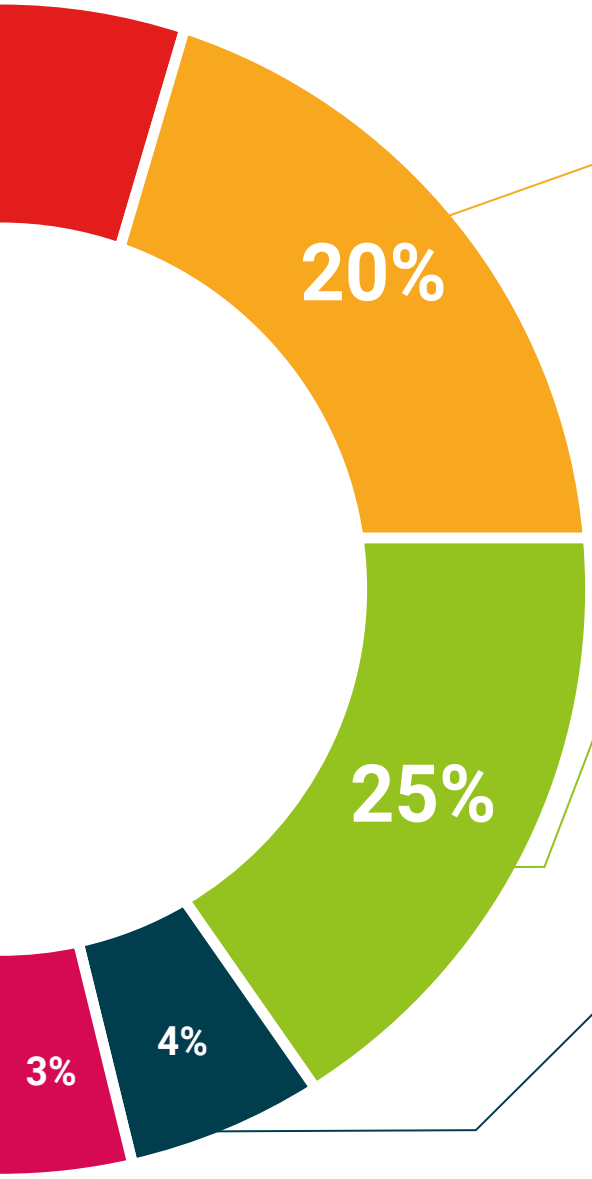
Practising Skills and Abilities

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 Application Development with Python 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 Application Development with Python** contains the most comprehensive and up-to-date educational 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 diploma 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 Application Development with Python**

Official Nº of Hours: **450 h.**


tech technological university

Awards the following

DIPLOMA

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Application Development with Python

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 diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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