Postgraduate Certificate

Testing in Artificial Intelligence Applications

tech technological university

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Postgraduate Certificate
Testing in Artificial Intelligence Applications

- Modality: **online**
- Duration: **6 weeks**
- Certificate: **TECH Technological University**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/information-technology/postgraduate-certificate/testing-artificial-intelligence-applications

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01

Introduction

Artificial Intelligence (AI) Bug Detection is a key technique in software development that serves to improve both the quality and reliability of applications. These advanced tools help developers identify bugs in code early, even before extensive testing is performed. This, in turn, enables faster and less costly correction of problems. In addition, these resources are used to identify critical security-related issues, thus preventing bugs or vulnerabilities in the software. In this context, TECH creates a 100% online university training that will focus on the design and effective writing of test cases in QA Testing.

You will detect the different bugs to ensure the quality and proper functioning of mobile applications thanks to this 100% online program"

Machine Learning applications can be vulnerable to cyber attacks and adversaries attempting to exploit weaknesses in the models. In this sense, testing is a valuable tool to help both identify and mitigate potential threats. This is why these programs must perform robustly in a variety of situations. In this way, computer scientists will be able to verify how the models behave in different scenarios and how they handle unexpected data. However, for this, it is essential for professionals to effectively handle the most advanced testing techniques and to keep abreast of developments in this area.

In this context, TECH launches a Postgraduate Certificate that will delve into the various phases of the testing life cycle for quality assurance. Designed by experts in the field, the curriculum will delve into the application of early bug detection techniques through static analysis. Students will be qualified to design test plans, applying a constant evaluation to apply the necessary adjustments. The syllabus will also analyze different strategies with mobile applications based on Artificial Intelligence components. In this way, graduates will use Machine Learning algorithms to detect problems in the performance of the programs.

This teaching also facilitates learning thanks to a 100% online modality, which allows students to access the content with a device with an Internet connection (such as a cell phone, computer or tablet) and at any time or moment of the day. In this way, they will be able to plan their schedules and evaluation chronograms individually. In addition, the resource library and case studies complement this university program, which offers a great opportunity to specialize in an area that is in great demand in the technology sector.

This **Postgraduate Certificate in Testing in Artificial Intelligence Applications** contains the most complete and up-to-date program on the market. The most important features include:

- Development of practical cases presented by experts in Artificial Intelligence in Programming
- The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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 design test plans to establish solid strategies, verifying that the programs are executed efficiently"

Take advantage of all the benefits of the Relearning methodology, which will allow you to organize your time and pace of study, adapting to your schedule"

You will become an API Testing expert in just 6 weeks with this university program.

You will design test plans to establish solid strategies, verifying that programs run effectively.

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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

Through this university program, computer scientists will acquire the skills to design and execute robust test plans. Therefore, graduates will cover different types of testing to ensure software quality at all times. In addition, students will elaborate automated tests efficiently, especially in web and mobile environments, integrating Artificial Intelligence tools to improve the optimization of the process. Likewise, professionals will handle the most advanced QA tools that are powered by Artificial Intelligence. This will enable more efficient bug detection and continuous software improvement.

You will delve into the testing lifecycle, from the creation of test cases to bug detection. And all in a convenient 100% online format!"

General Objectives

- Develop skills to configure and manage efficient development environments, ensuring a solid foundation for the implementation of AI projects
- Acquire skills in planning, executing and automating quality testing, incorporating AI tools for bug detection and correction
- Understand and apply performance, scalability and maintainability principles in the design of large-scale computing systems
- Become familiar with the most important design patterns and apply them effectively in software architecture

No rigid schedules or evaluative timelines. That's how flexible this TECH training is!"

Specific Objectives

- Master principles and techniques for designing computer systems that are scalable and capable of handling large volumes of data
- Apply advanced skills in the implementation of AI-powered data structures to optimize software performance and efficiency
- Understand and apply secure development practices, with a focus on avoiding vulnerabilities such as injection, to ensure software security at the architectural level
- Generate automated tests, especially in web and mobile environments, integrating AI tools to improve process efficiency
- Use advanced AI-powered QA tools for more efficient bug detection and continuous software improvement

03

Course Management

In order to achieve the highest quality and usefulness in teaching, TECH has selected professionals specialized in Testing in Artificial Intelligence Applications as part of this teaching staff. These experts have been in charge of the design of the most advanced contents, pouring into them their years of work experience. In this way, students will learn from the best the keys to their professional development in a field that adapts to new technologies and the latest advances in the market.

An experienced group of teachers will guide you throughout the teaching process and will resolve any doubts you may have"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO at Korporate Technologies
- CTO at AI Shepherds GmbH
- Consultant and Strategic Business Advisor at Alliance Medical
- Director of Design and Development at DocPath
- PhD. in Psychology from the University of Castilla La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University
- PhD in Psychology from University of Castilla La Mancha
- Máster in Executive MBA por la Universidad Isabel I
- Master's Degree in Sales and Marketing Management, Isabel I University
- Expert Master's Degree in Big Data by Hadoop Training
- Master's Degree in Advanced Information Technologies from the University of Castilla La Mancha
- Member of: SMILE Research Group

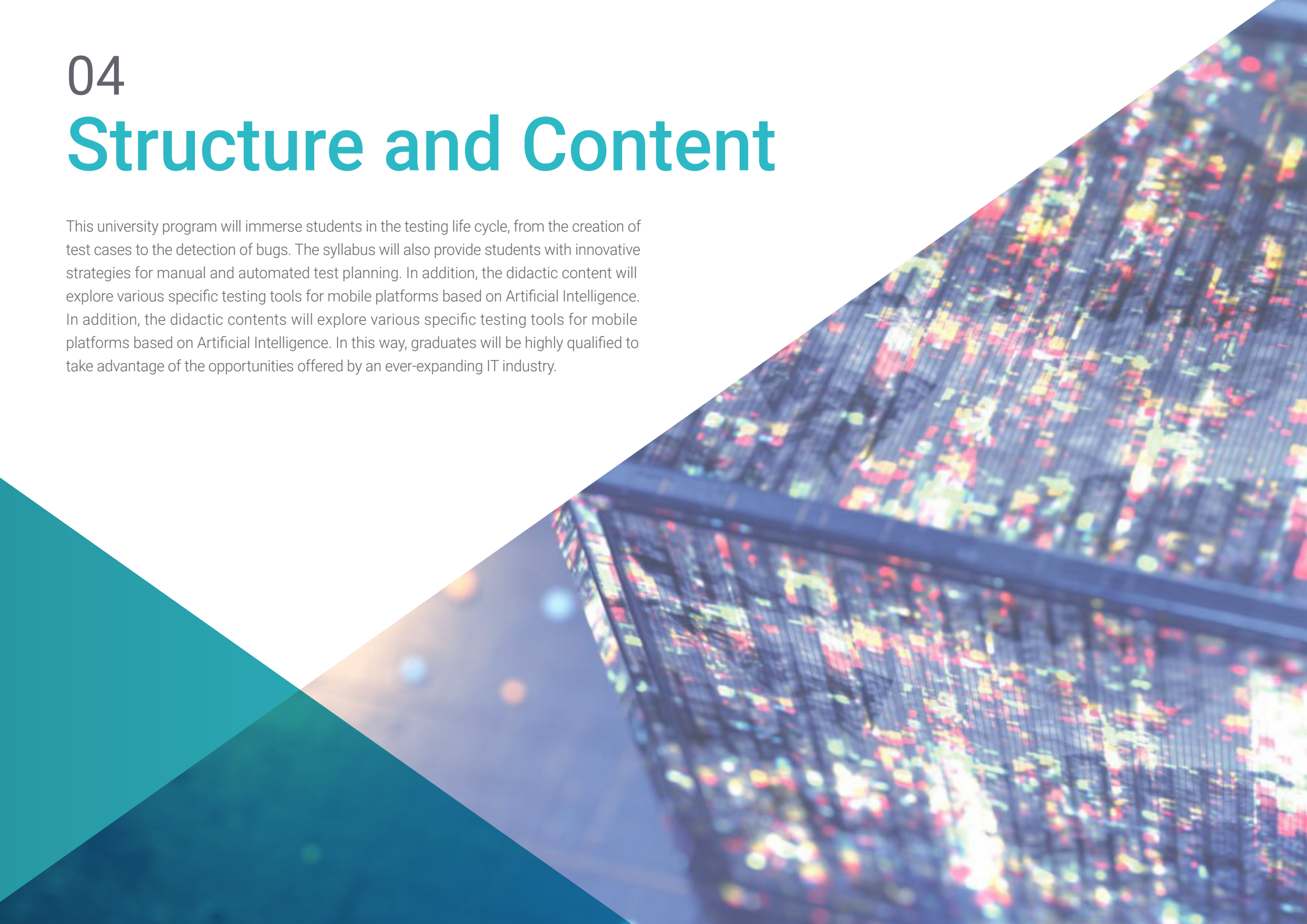
Mr. Castellanos Herreros, Ricardo

- Chief Technology Officer at OWQLO
- Specialist in Computer Systems Engineering and Machine Learning Engineer
- Freelance Technical Consultant
- Mobile Applications Developer for eDreams, Fnac, Air Europa, Bankia, Cetelem, Banco Santander, Groupón and Grupo Planeta
- Web Developer for Openbank and Banco Santander.
- Technical Engineer in Computer Systems from the University of Castilla la Mancha.

04

Structure and Content

This university program will immerse students in the testing life cycle, from the creation of test cases to the detection of bugs. The syllabus will also provide students with innovative strategies for manual and automated test planning. In addition, the didactic content will explore various specific testing tools for mobile platforms based on Artificial Intelligence. In addition, the didactic contents will explore various specific testing tools for mobile platforms based on Artificial Intelligence. In this way, graduates will be highly qualified to take advantage of the opportunities offered by an ever-expanding IT industry.



You will learn through real cases and by solving complex situations in simulated learning environments"

Module 1. AI for QA Testing

1.1. Software Testing Life Cycle
- 1.1.1. Description and Understanding of the Testing Life Cycle in Software Development
- 1.1.2. Phases of the Testing Life Cycle and its Importance in Quality Assurance
- 1.1.3. Integration of Artificial Intelligence in Different Stages of the Testing Life Cycle
- 1.1.4. Strategies for Continuous Improvement of the Testing Life Cycle using AI

1.2. Test Cases and Bug Detection with the Help of ChatGPT
- 1.2.1. Effective Test Case Design and Writing in the Context of QA Testing
- 1.2.2. Identification of Bugs and Errors during Test Case Execution
- 1.2.3. Application of Early Bug Detection Techniques using Static Analysis
- 1.2.4. Use of Artificial Intelligence Tools for the Automatic Identification of Bugs in Test Cases

1.3. Types of Testing
- 1.3.1. Exploration of Different Types of Testing in the QA Environment
- 1.3.2. Unit, Integration, Functional, and Acceptance Testing: Characteristics and Applications
- 1.3.3. Strategies for the Selection and Appropriate Combination of Testing Types in Projects with ChatGPT
- 1.3.4. Adaptation of Conventional Testing Types to Projects with ChatGPT

1.4. Creation of a Testing Plan Using ChatGPT
- 1.4.1. Design and Structure of a Comprehensive Testing Plan
- 1.4.2. Identification of Requirements and Test Scenarios in AI Projects
- 1.4.3. Strategies for Manual and Automated Test Planning
- 1.4.4. Continuous Evaluation and Adjustment of the Testing Plan as the Project Develops

1.5. AI Bug Detection and Reporting
- 1.5.1. Implementation of Automatic Bug Detection Techniques using Machine Learning Algorithms
- 1.5.2. Use of ChatGPT for Dynamic Code Analysis to Search for Possible Bugs
- 1.5.3. Strategies for Automatic Generation of Detailed Reports on Bugs Detected Using ChatGPT
- 1.5.4. Effective Collaboration between Development and QA Teams in the Management of AI-Detected Bugs

1.6. Creation of Automated Testing with AI
- 1.6.1. Development of Automated Test Scripts for Projects Using ChatGPT
- 1.6.2. Integration of AI-Based Test Automation Tools
- 1.6.3. Using ChatGPT for Dynamic Generation of Automated Test Cases
- 1.6.4. Strategies for Efficient Execution and Maintenance of Automated Test Cases in AI Projects

1.7. API Testing
- 1.7.1. Fundamental Concepts of API Testing and its Importance in QA
- 1.7.2. Development of Tests for the Verification of APIs in Environments Using ChatGPT
- 1.7.3. Strategies for Data and Results Validation in API Testing with ChatGPT
- 1.7.4. Use of Specific Tools for API Testing in Projects with Artificial Intelligence

1.8. AI Tools for Web Testing
- 1.8.1. Exploration of Artificial Intelligence Tools for Test Automation in Web Environments
- 1.8.2. Integration of Element Recognition and Visual Analysis Technologies in Web Testing
- 1.8.3. Strategies for Automatic Detection of Changes and Performance Problems in Web Applications Using ChatGPT
- 1.8.4. Evaluation of Specific Tools for Improving Efficiency in Web Testing with AI

1.9. Mobile Testing Using AI
- 1.9.1. Development of Testing Strategies for Mobile Applications with AI Components
- 1.9.2. Integration of Specific Testing Tools for AI-Based Mobile Platforms
- 1.9.3. Use of ChatGPT for Detecting Performance Problems in Mobile Applications
- 1.9.4. Strategies for the Validation of Interfaces and Specific Functions of Mobile Applications by AI

1.10. QA Tools with AI
- 1.10.1. Exploration of QA Tools and Platforms that Incorporate Artificial Intelligence Functionality
- 1.10.2. Evaluation of Tools for Efficient Test Management and Test Execution in AI Projects
- 1.10.3. Using ChatGPT for the Generation and Optimization of Test Cases
- 1.10.4. Strategies for Effective Selection and Adoption of QA Tools with AI Capabilities

A flexible university program, without fixed schedules and with content available 24 hours a day. 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

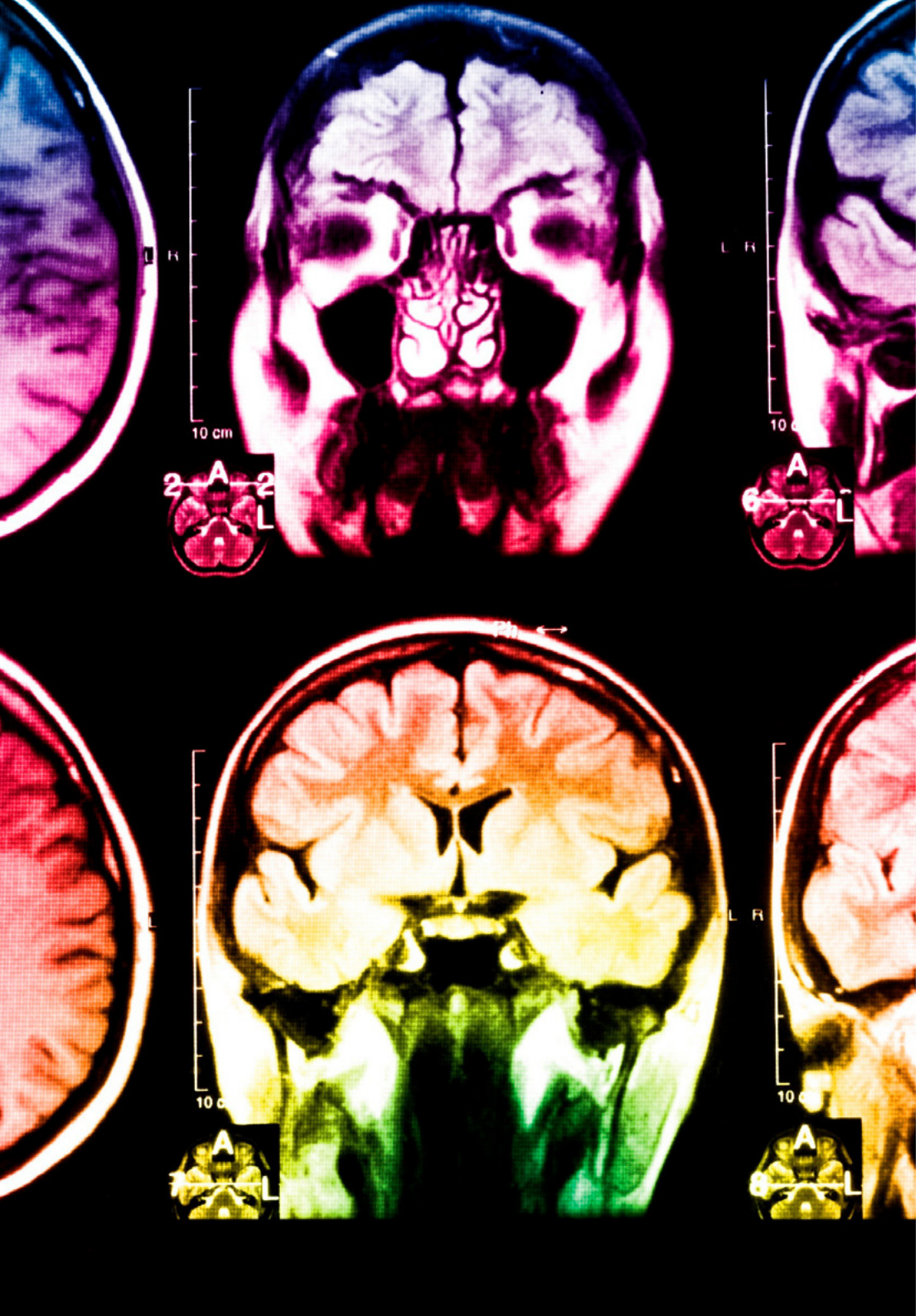
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

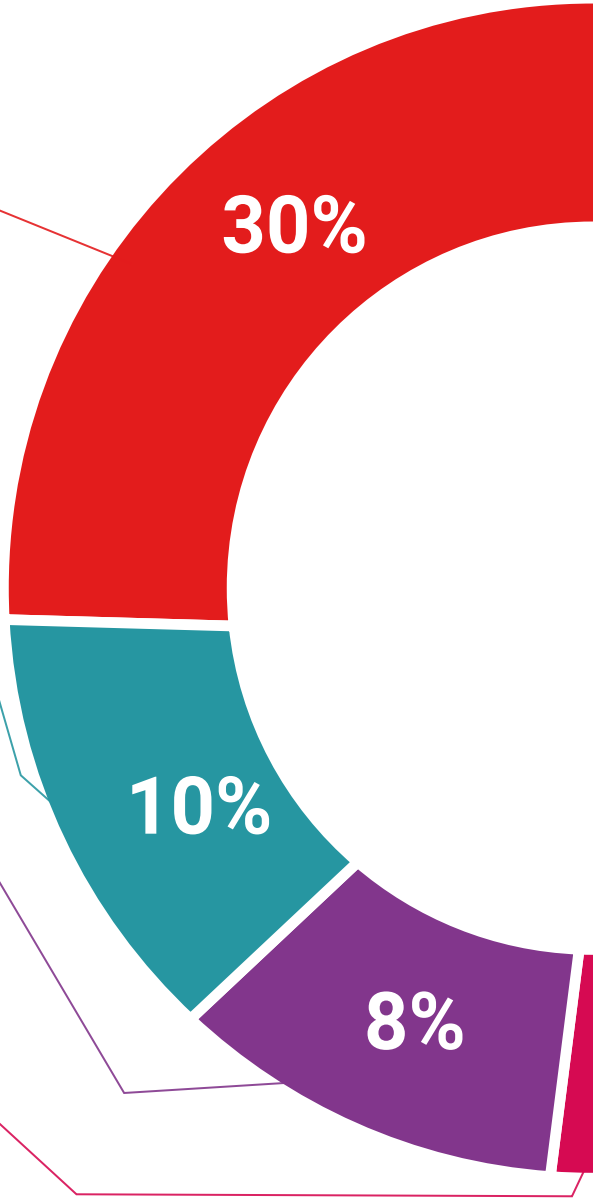
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

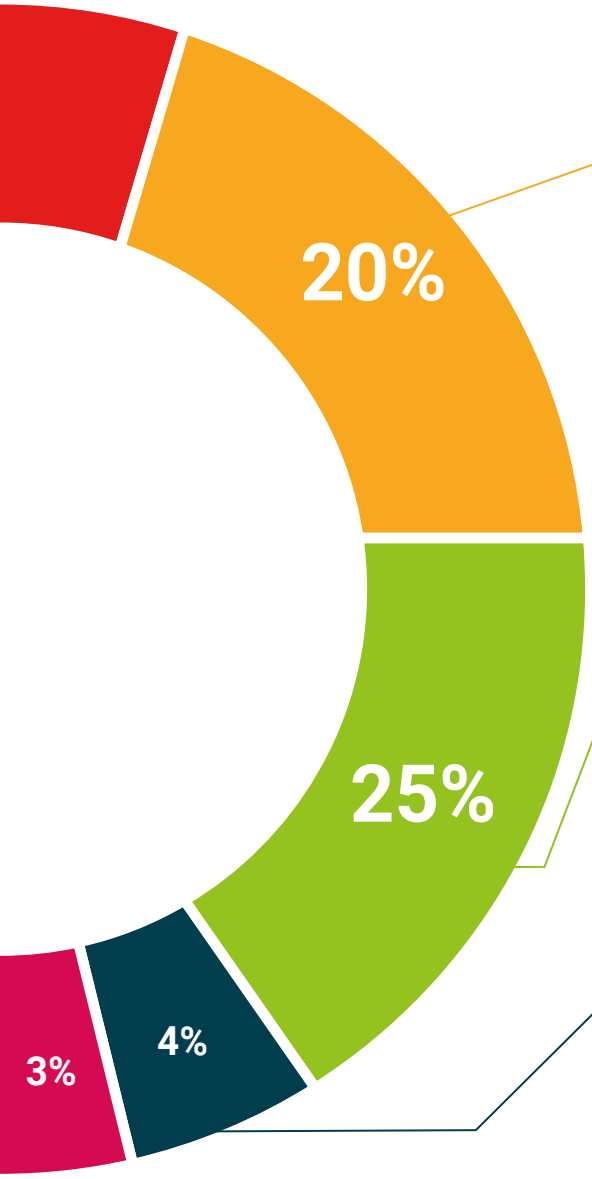
Practising Skills and Abilities

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

This Postgraduate Certificate in Testing in Artificial Intelligence Applications guarantees, in addition to the most rigorous and updated training, 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 Testing in Artificial Intelligence Applications** contains the most complete and updated Scientific program in 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 Testing in Artificial Intelligence Applications**

Modality: **online**

Duration: **6 weeks**


tech technological university

Awards the following

DIPLOMA

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Testing in Artificial Intelligence Applications

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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