Postgraduate Certificate

Continuous Integration and Application Deployment

tech technological university

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Postgraduate Certificate

Continuous Integration and Application Deployment

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

Website: www.techtitute.com/pk/information-technology/postgraduate-certificate/continuous-integration-application-deployment

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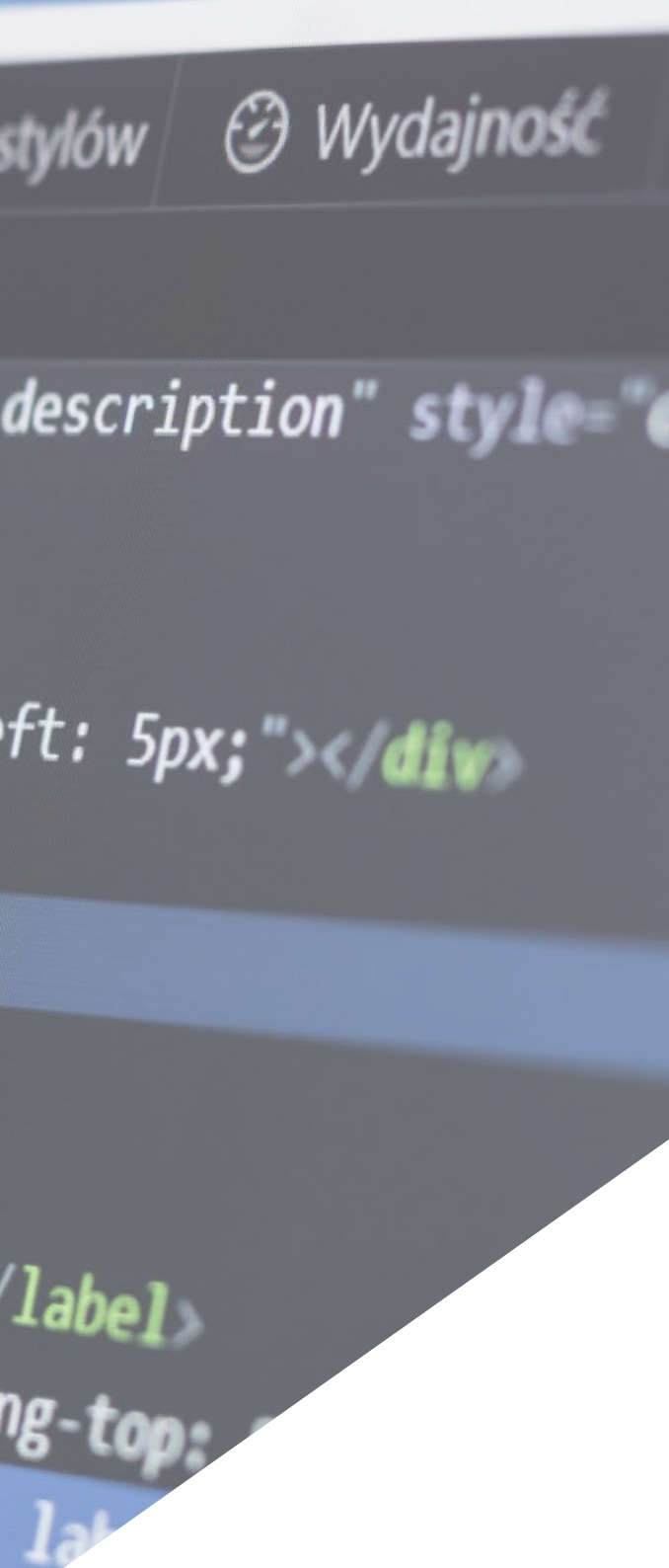
01

Introduction

Deploying a simple application requires some coordination and carries a certain risk associated with it, such as tasks that are performed incorrectly, difficulties in finding out who has touched what, unclear roll out and roll back processes, etc. For any IT company, when talking about organizations with a large number of applications to manage, it is essential to have automated pipelines. This 100% educational program encompasses tools to ensure the integration, delivery and continuous deployment of software in a repeatable, auditable and, above all, fast way. The practice of *Continous Integration* and *Continous Deployment* is an essential part of DevOps and is based on different concepts, technologies and tools that are discussed in depth throughout the program.



Study through a practice-focused Postgraduate Certificate, boosting your skills to the level of a specialist"

It is useless for a computer scientist to program perfectly if he is not able to coordinate so that his code and that of his colleagues is perfectly integrated. It is of no use for his application to work perfectly on his laptop if when he moves it to another environment it stops working. There is no point in developing new features very quickly if it takes longer and longer to bring them to production.

In order to optimize the entire software lifecycle and achieve a higher quality product by reducing possible errors, the Postgraduate Certificate develops methodologies such as DevOps that are committed to automation in the development stages, as well as better communication between developers and operators. To this end, the student is instructed to use techniques such as continuous integration, continuous delivery and continuous deployment.

Likewise, the student will be the one who decides when, where and how to assume the entire course load, as this is an online Postgraduate Certificate with great flexibility. There are no fixed schedules or face-to-face classes. All the content of the virtual classroom can be followed from any device with internet connection and is available for download.

This **Postgraduate Certificate in Continuous Integration and Application Deployment** 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 Continuous Integration and Application Deployment
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions for experts and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection

A high level course with the most interesting methodology of online teaching, created to be affordable and flexible"

This Postgraduate Certificate is based on different concepts, technologies and tools that you will analyze in depth"

Computer scientists focused on the CI&CD practice offer a strong competitive advantage for better jobs.

You will learn how to ensure continuous software integration, delivery and deployment in a repeatable, auditable and rapid manner.

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

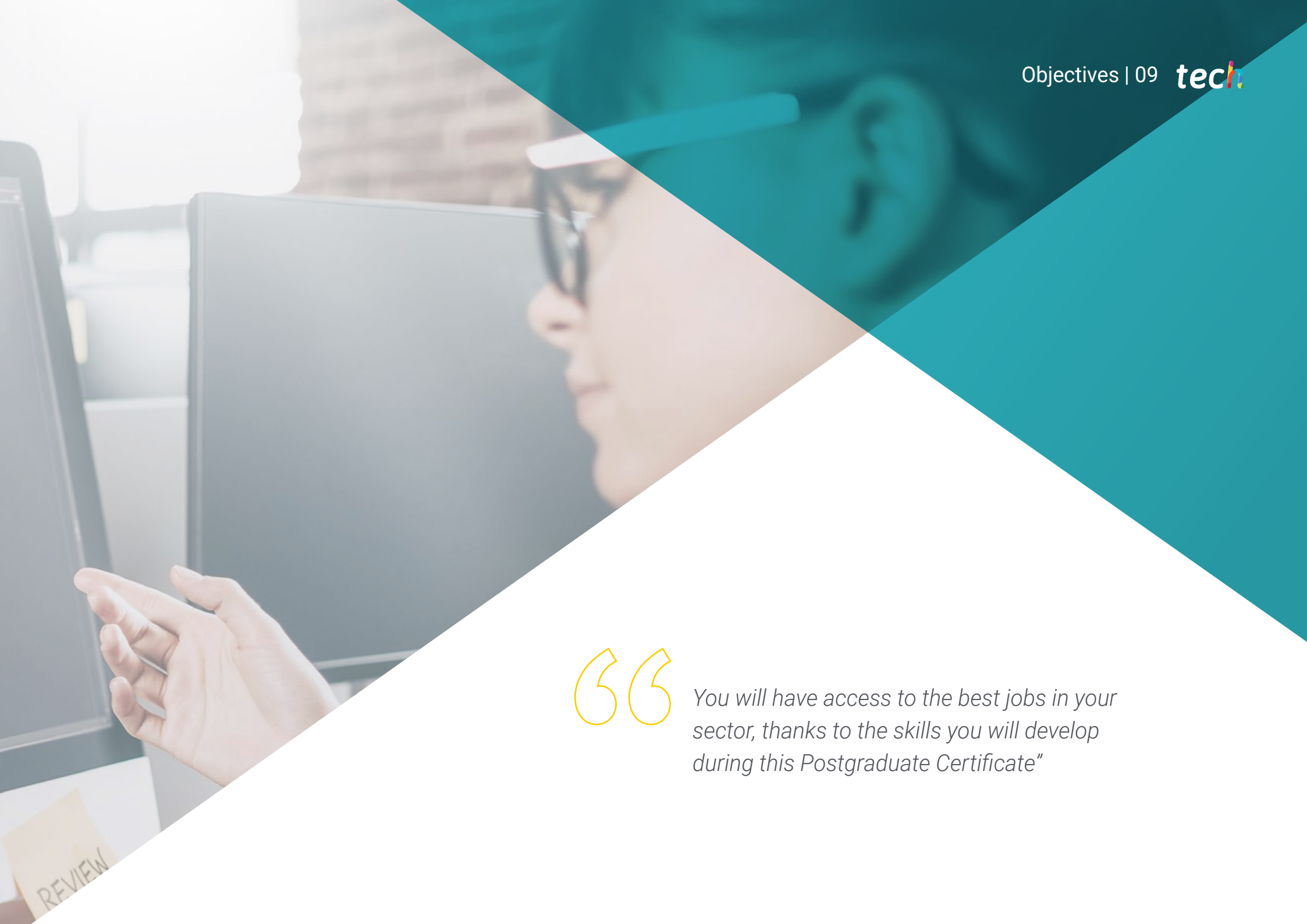
The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

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 objective of this program is to provide IT professionals with the knowledge and skills necessary to perform their activity using the most advanced protocols and techniques of the moment. Through a work approach that is totally adaptable to the students, this Postgraduate Certificate will progressively lead them to acquire the competencies that will propel them to a higher professional level.

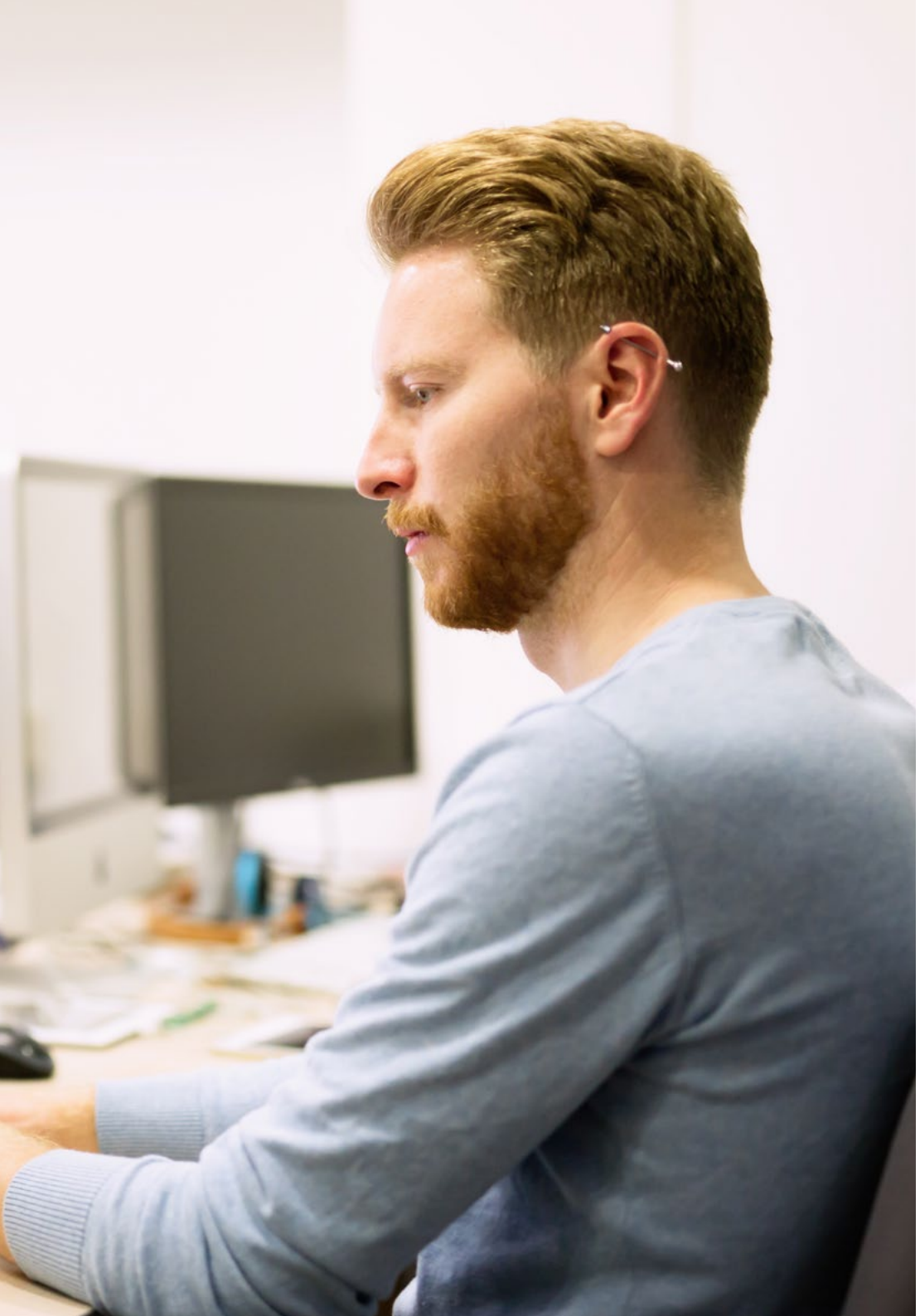


You will have access to the best jobs in your sector, thanks to the skills you will develop during this Postgraduate Certificate"

General Objectives

- Develop specialized knowledge around CI/CD practice
- Analyze the different automation mechanisms for continuous integration and deployment
- Examine the interlocking of CI/CD processes within the DevOps framework
- Identify key technologies, tools and trends in the DevOps ecosystem

An excellent specialized educational plan for professionals like you who want to improve in their profession"



Specific Objectives

- Realize the benefits of adopting an automated application deployment model
- Establish the differences between continuous integration, continuous delivery and continuous deployment
- Determine the main features of DevOps
- Assess some of the fundamental tools for implementing CI/CD pipelines
- Develop the essential factors for developing applications ready to support CI/CD processes
- Examine container technologies as a fundamental pillar of CI/CD practice
- Identify practices, use cases, technologies and tools from the CI/CD ecosystem, essential to support the overall process

03

Course Management

The faculty who teach this program have been selected for their exceptional competence in continuous integration and application deployment. Through the combination of technical and practical experience with teaching, they offer the graduate a first level support in achieving their goals. This Postgraduate Certificate offers the most direct vision of the real characteristics of the application in this field achieving a contextual vision of maximum interest.

Achieve professional success as an IT professional with this intensive program, developed by professionals with extensive experience in the sector"

Management

Mr. Olalla Bonal, Martín

- Client Technical Specialist Blockchain in IBM
- Blockchain Hyperledger and Ethereum Architecture Manager at Blocknitive
- Director of the Blockchain area at PSS Information Technologies
- Chief Information Officer at ePETID - Global Animal Health
- IT Infrastructure Architect at Bankia - wdoIT (IBM - Bankia Join Venture)
- Project director and manager at Daynet integral services
- Director of Technology at Wiron Construcciones Modulares
- Head of IT Department at Dayfisa
- Head of IT department at Dell Computer, Majsa and Hippo Viajes
- Electronics Technician in IPFP Juan de la Cierva

Professors

Mr. Reyes Oliva, Luis

- Development developer and cloud architect at IBM
- Technical client manager for integrated accounts for BBVA at IBM
- Cloud Executive Selling at IBM
- Cloud and DevOps Architect at IBM
- Customer Software Architect at Telefónica
- Technical Solutions Architect at Rational
- Software Engineering Manager at Borland
- Software Development and Quality Assurance Manager at Altana Consulting
- Degree in Computer Engineering from Pontificia University of Salamanca, in Madrid

04

Structure and Content

The structure of the contents has been designed by a team of professionals in Computer Science, aware of the relevance of the current relevance of the content in order to delve into this area of knowledge. All this in order to humanistically enrich the student and raise the level of specialized knowledge in Continuous Integration and Application Deployment, using the latest educational technologies available.

You will find the most complete and up-to-date learning program on the market in this Postgraduate Certificate"

Module 1. Continuous Integration and Application Deployment

1.1. Continuous Integration and Continuous Deployment: CI/CD
- 1.1.1. Use of Continuous Integration and Continuous Deployment (CI/CD)
- 1.1.2. Differences Between Continuous Integration and Continuous Deployment (CI/CD)
- 1.1.3. Continuous Integration and Continuous Deployment. Benefits of CI/CD

1.2. New Development Paradigms
- 1.2.1. From Waterfall to DevOps
- 1.2.2. Style Guide: The 12 Factors
- 1.2.3. Cloud Native, Microservices and *Serverless*

1.3. DevOps, Beyond CI/CD
- 1.3.1. DevOps
- 1.3.2. DevOps. *Continuous Everything*
- 1.3.3. DevOps Vs. SRE

1.4. Container Technology I-Docker
- 1.4.1. Containers Contribution
- 1.4.2. Docker. Architecture
- 1.4.3. Deployment Process with Docker

1.5. Container Technology II-Kubernetes
- 1.5.1. Orchestration
- 1.5.2. Kubernetes
- 1.5.3. The Kubernetes Ecosystem

1.6. Infrastructure Configuration with GitOps
- 1.6.1. Immutable Infrastructure
- 1.6.2. GitOps
- 1.6.3. GitOps Tools

1.7. Pipelines and Automation. CI/CD Use Cases
- 1.7.1. Continuous Integration
- 1.7.2. Continuous Deployment and Delivery
- 1.7.3. Automatic Validation
- 1.7.4. Best Practices in CI/CD

1.8. CI/CD with Jenkins. Reference:
- 1.8.1. CI/CD with Jenkins
- 1.8.2. Jenkins Pipelines
- 1.8.3. Best Practices with Jenkins

1.9. CI/CD Ecosystem
- 1.9.1. Ecosystem Organization
- 1.9.2. Advanced Tools
- 1.9.3. Dagger. The Future

1.10. Final Phases of the CI/CD Oriented Software Cycle
- 1.10.1. Application of IA to the CI/CD Process
- 1.10.2. DevSecOps
- 1.10.3. *Chaos Engineering*

Achieve the level of knowledge you desire and master the fundamental concepts in Continous Integration and Continous Deployment with this high-level educational program"

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

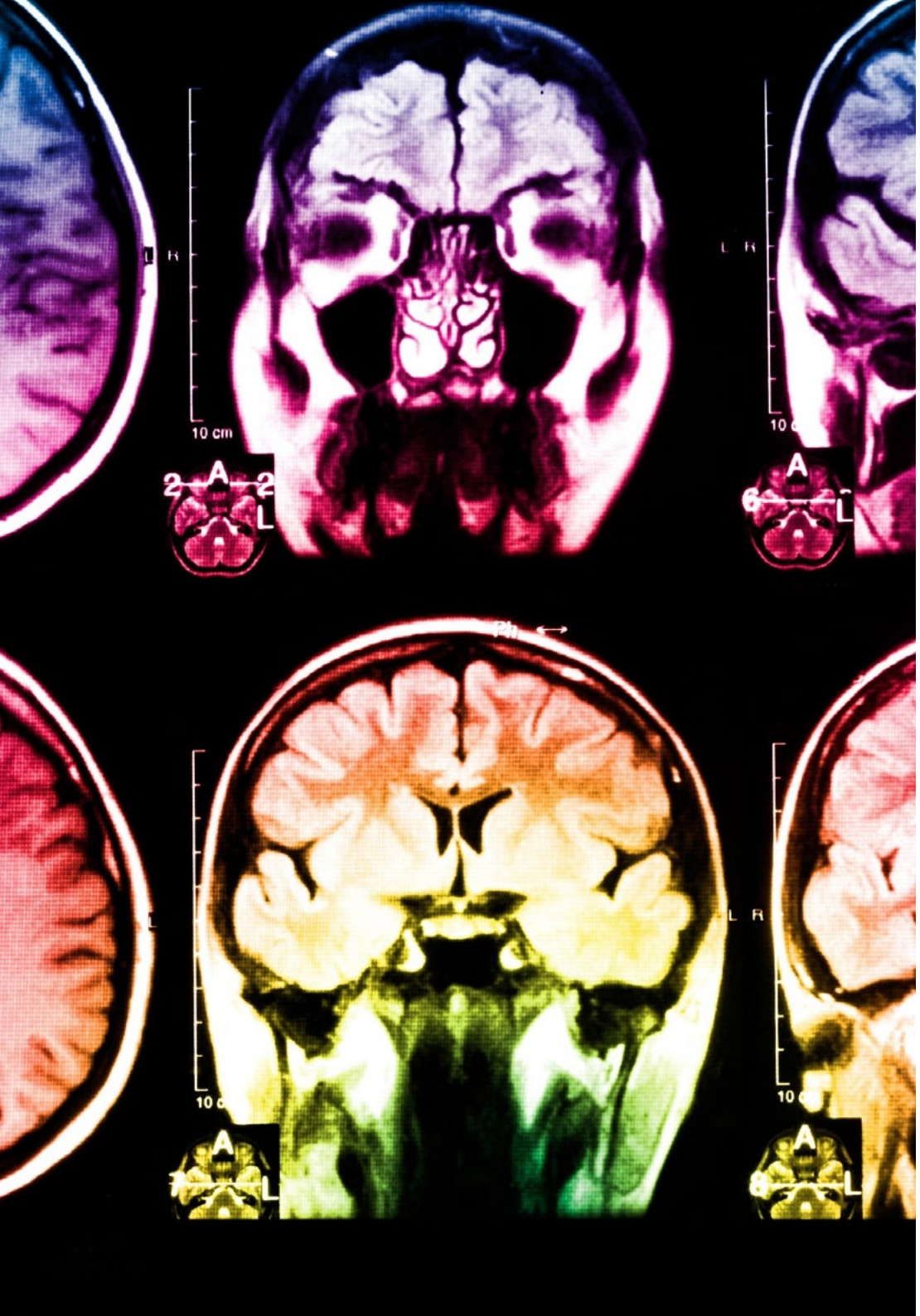
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

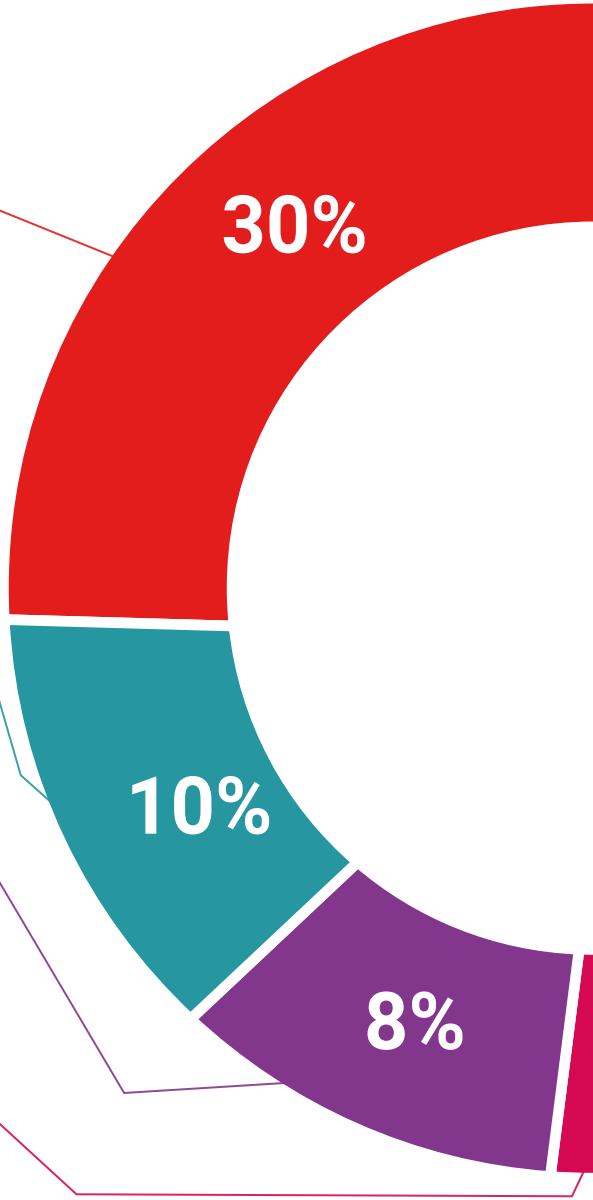
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

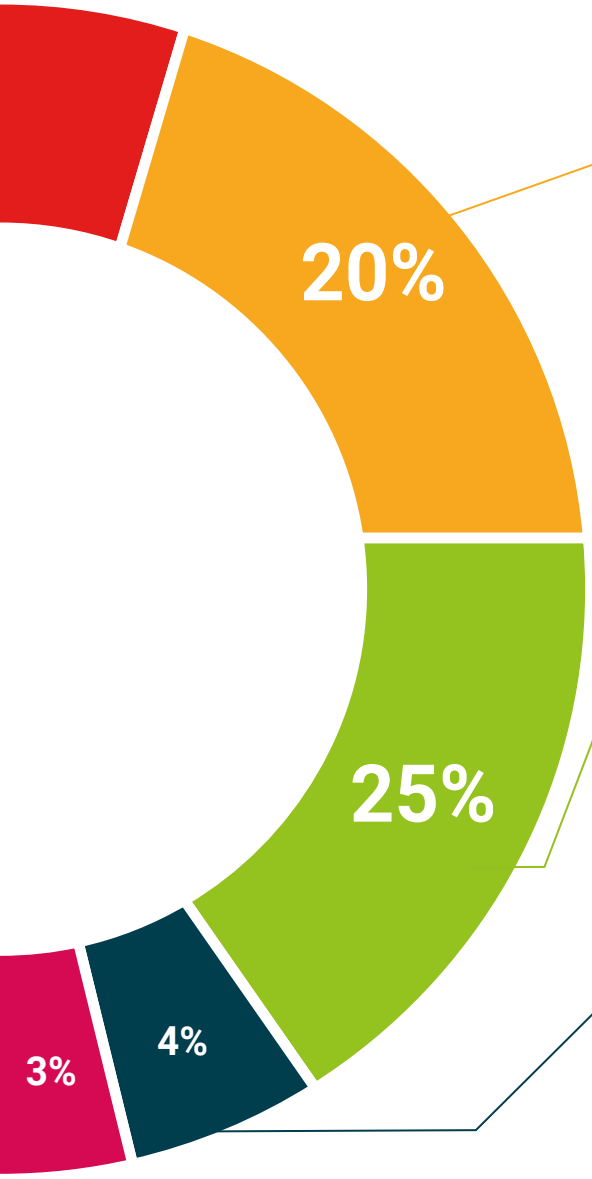
Practising Skills and Abilities

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 Continuous Integration and Application Deployment 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 Continuous Integration and Application Deployment** 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 certificate 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 Continuous Integration and Application Deployment**

Official Nº of hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Continuous Integration and Application Deployment

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

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