

Postgraduate Certificate

Deployment of Applications Using Kubernetes and Docker



Postgraduate Certificate Deployment of Applications Using Kubernetes and Docker

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

Website: www.techtute.com/in/information-technology/postgraduate-certificate/deployment-applications-using-kubernetes-docker

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01

Introduction

There are currently a wide variety of applications on the market that allow container orchestration. However, most of the companies in the Cloud sector and companies operating on the Internet require qualified personnel who have a perfect command of Kubernetes and Docker. This program examines and establishes the guidelines to work with containers and allows IT professional to be able to design a reference architecture. All this is possible thanks to the extensive library of multimedia resources and online teaching, which gives students the opportunity to distribute their learning at their own pace.



“

Companies such as Babylon, Booking.com or AppDirect use Kubernetes to communicate with their users. Take part of the largest companies in the technology sector. Enroll now”

The technology sector is in full expansion and that is why every day new professional profiles emerge that are demanded by large companies in the sector. This situation means that the competitiveness in the field of Cloud Computing is high. This education provides a specialization to IT professionals according to the requirements of their field.

This program helps students to develop in business environments, which use in their daily lives a large amount of data that must be properly managed and must also provide agility in work processes. With container orchestration, professionals solve problems through automation, deployment, scalability, load balancing, availability and creation of container networks.

The teaching team of this Postgraduate Certificate will delve into all these aspects by explaining about the Kubernetes and Docker platforms, and will also dedicate time to the configuration and deployment of applications with Rancher and Openshift.

A good opportunity for IT professionals seeking to consolidate and expand their knowledge in Cloud environments with a 100% online educational program. Without fixed schedules or in-person attendance, students have total freedom to access all the material of this program at any time through an electronic device with internet connection.

This **Postgraduate Certificate in Deployment of Applications Using Kubernetes and Docker** contains the most complete and up-to-date program on the market.

Its most notable features are:

- ◆ The development of practical cases presented by experts in Cloud Programming
- ◆ The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with Internet connection



*Be an expert and master the
Deployment of Applications Using
Kubernetes and Docker Enroll now
in this Postgraduate Certificate”*

“

Add one more step forward in your professional career. Improve your knowledge on deployment of applications and your professional development”

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.

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

The design of this program focuses on Problem-Based Learning, by means of which professionals must try to solve the different professional practice situations that are presented to them throughout the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

Know how to apply Kubernetes and Docker in different business sectors and broaden your professional scope Enroll now.

This Postgraduate Certificate will help you master Kubernetes and Docker, and know the latest trends in Cloud environments.



02 Objectives

Upon completing this Postgraduate Certificate you will gain a wide knowledge on Deployment of Applications Using Kubernetes and Docker This will allow you to develop the basics of architecture and container technology with two of the most popular platforms currently used in Cloud environments. They will also be able to analyze and determine which one to use in each project depending on the company or organization they work for. The simulation of real cases will enable IT professionals to consolidate the knowledge acquired in this program.



“

After completing the 6-week program, you will obtain a boost in your career in Cloud environments. Improve your technical skills with this Postgraduate Certificate”



General Objectives

- ◆ Analyze the different approaches to cloud adoption and their contexts
- ◆ Acquire specialized knowledge to determine the appropriate Cloud
- ◆ Develop a virtual machine in Azure
- ◆ Establish the sources of threats in application development and best practices to apply
- ◆ Evaluate the differences in the specific implementations of different public Cloud vendors
- ◆ Determine the different technologies applied to containers
- ◆ Identify the key aspects of a Cloud Native adoption strategy
- ◆ Fundamentals and evaluation of the programming languages most commonly used in Big Data, necessary for data analysis and processing





Specific Objectives

- ◆ Develop the foundations of container architecture and technology
- ◆ Establish the different technologies applied to containers
- ◆ Determine infrastructure requirements
- ◆ Examine deployment options

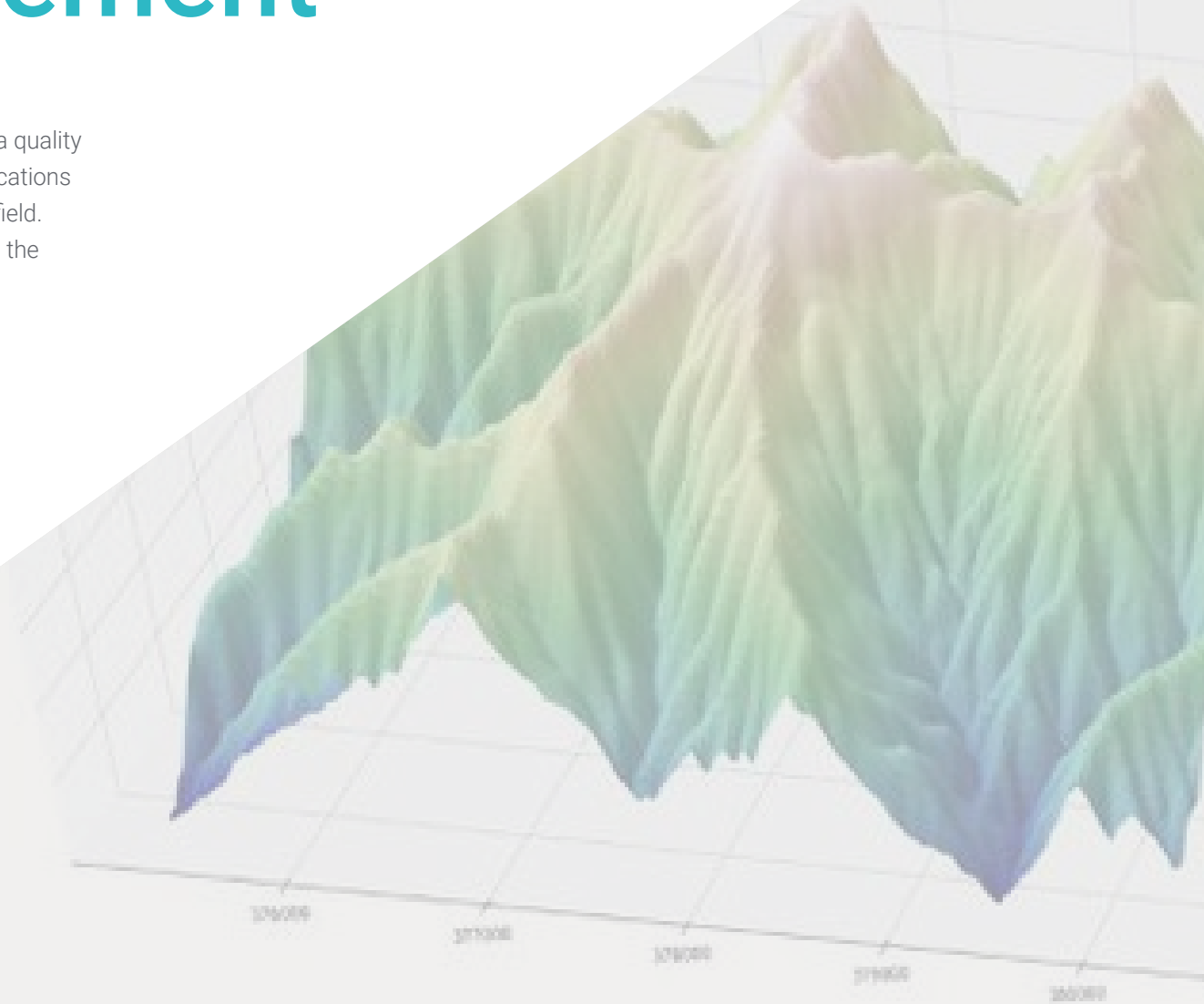
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*Refine, improve and apply
all the knowledge you gain
in this program to develop
professional cloud architecture”*

03

Course Management

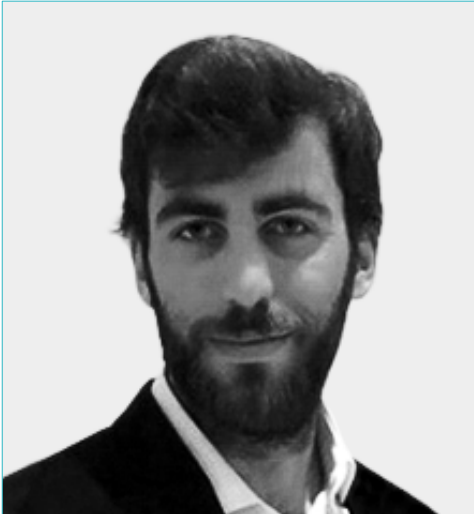
TECH has specialized and relevant professionals in all its programs. The objective of this selection of qualified teaching staff is to offer students a quality education. In this Postgraduate Certificate, the teaching staff has qualifications and professional experience in Cloud environments and in the teaching field. A guarantee of avant-garde and learning content, useful for advancing in the technology sector.





The proximity and professionalism of the teaching staff of this Postgraduate Certificate will make you feel comfortable in a program that will enhance your resumé”

Management



Mr. Bressel Gutiérrez-Ambrossi, Guillermo

- ◆ Specialist in Systems Administration and Computer Networks
- ◆ Storage and SAN Network Administrator at Experis IT (BBVA)
- ◆ Network Administrator at IE Business School
- ◆ Graduate in Computer Systems and Network Administration at ASIR (ASIR)
- ◆ Ethical Hacking course at OpenWebinar
- ◆ Powershell course at OpenWebinar

Professors

D. Gómez Rodríguez, Antonio

- ◆ Principal Cloud Solutions Engineer for Oracle
- ◆ Co-organizer of Málaga Developer Meetup
- ◆ Specialist Consultant for Sopra Group and Everis
- ◆ Team Leader at System Dynamics
- ◆ Software Developer at SGO Software
- ◆ Master's Degree in E-Business from La Salle Business School
- ◆ Postgraduate Degree in Information Technologies and Systems, Catalan Institute of Technology
- ◆ Degree in Telecommunications Engineering from the Polytechnic University of Catalonia



04

Structure and Content

The syllabus of this program is aimed at the IT professionals that seek to delve into the platforms more used in the deployment of applications. For this reason, the teaching staff has developed a syllabus that focuses mainly on the Kubernetes and Docker platforms. In both platforms, students will learn all their features and main uses. In addition, they will learn about other platforms currently used by companies in different sectors. The video summaries, the interactive content and the Relearning system, based on the reiteration of content, will support students in acquiring agile and practical learning.

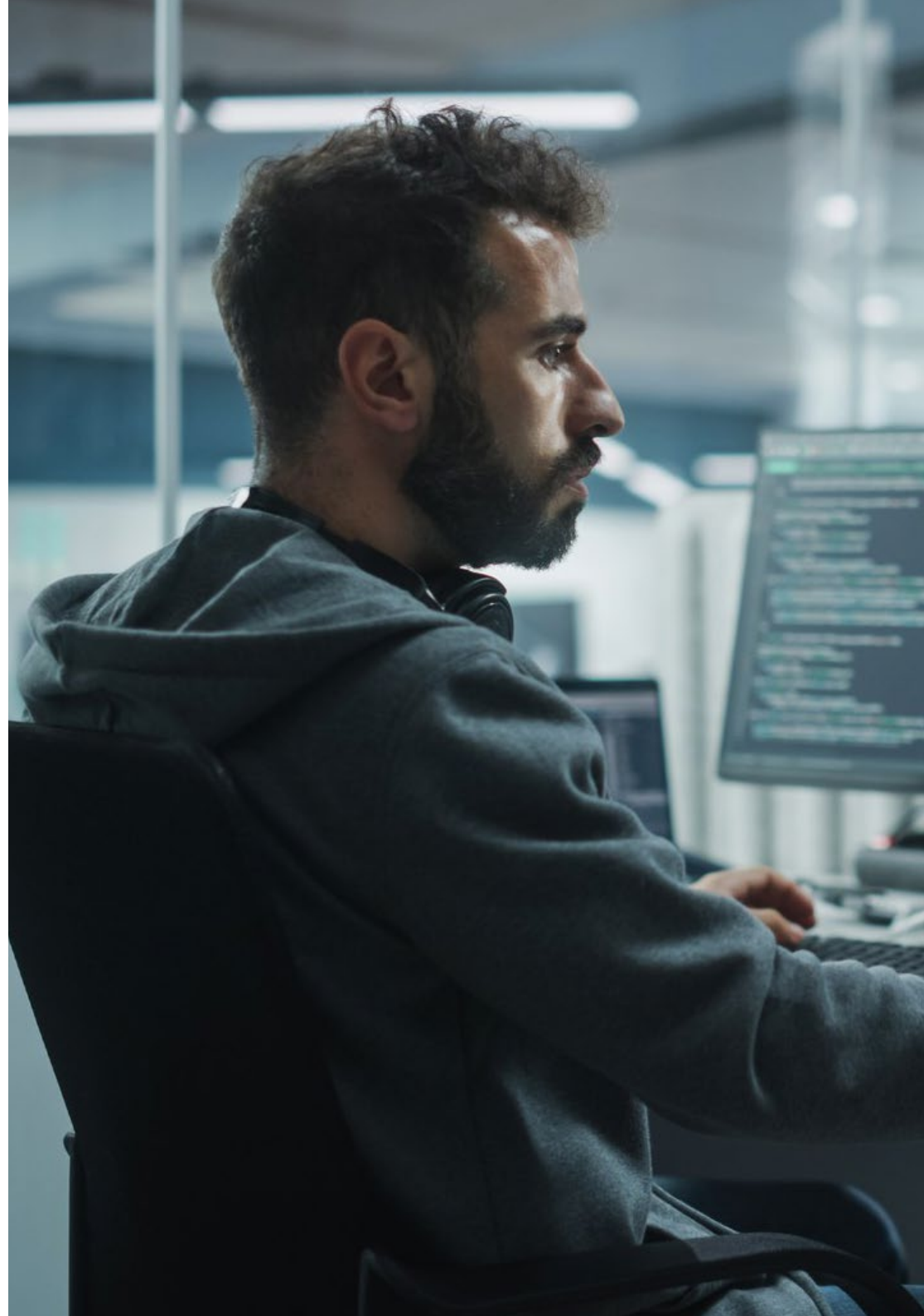


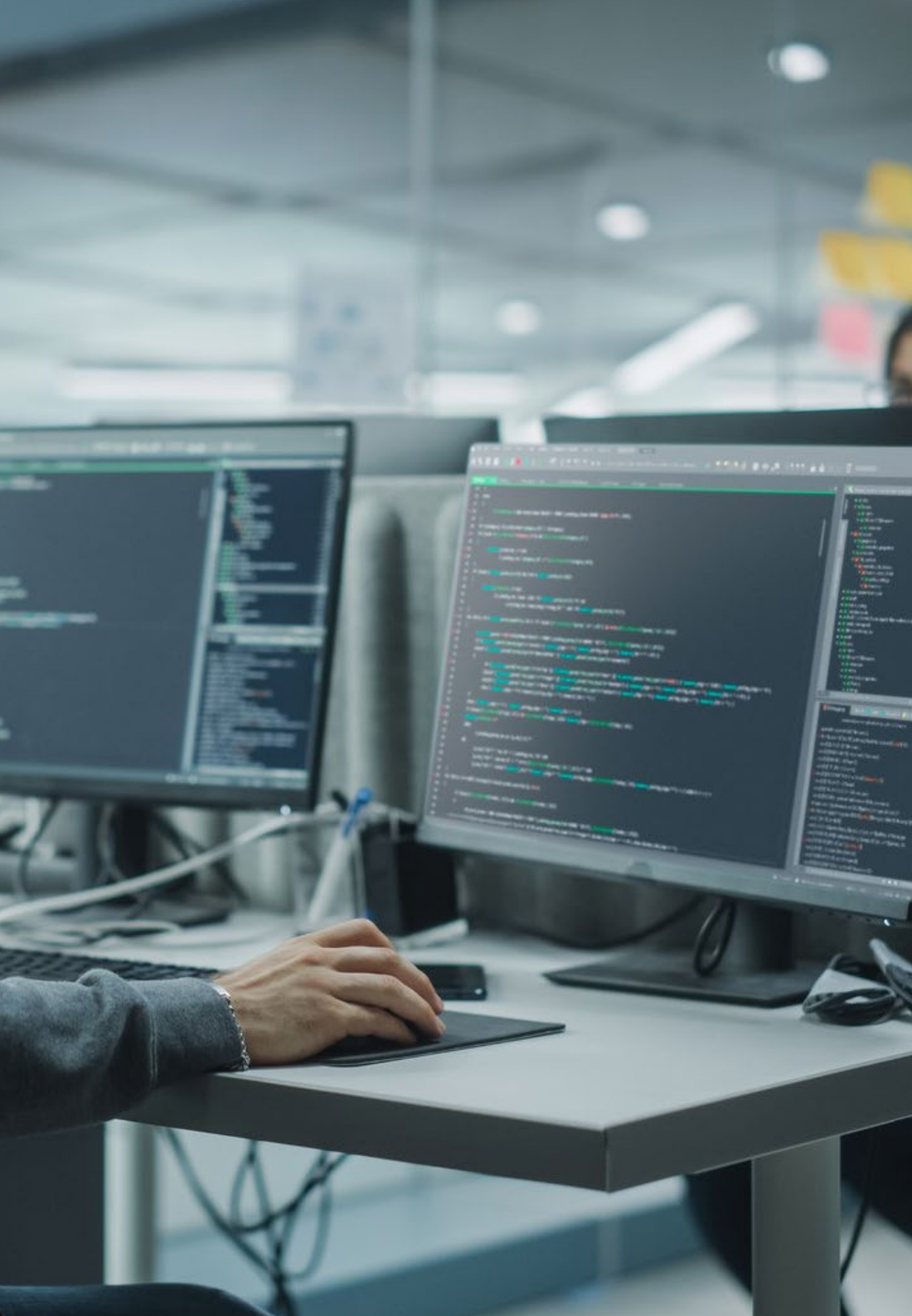


Organize your teaching load according to your needs. Connect from any electronic device at any time and acquire the knowledge you need”

Module 1. Container Orchestration: Kubernetes and Docker

- 1.1. Basis of Application Architectures
 - 1.1.1. Current Application Models
 - 1.1.2. Application Execution Platforms
 - 1.1.3. Container Technologies
- 1.2. Docker Architecture
 - 1.2.1. Docker Architecture
 - 1.2.2. Docker Architecture Installation
 - 1.2.3. Commands Local Project
- 1.3. Docker Architecture Storage Management
 - 1.3.1. Image and Register Management
 - 1.3.2. Docker Networks
 - 1.3.3. Storage Management
- 1.4. Advanced Docker Architecture
 - 1.4.1. Docker Compose
 - 1.4.2. Docker in Organization
 - 1.4.3. Docker Adoption Example
- 1.5. Kubernetes Architecture
 - 1.5.1. Kubernetes Architecture
 - 1.5.2. Kubernetes Deployment Elements
 - 1.5.3. Distributions and Managed Solutions
 - 1.5.4. Installation and Environment
- 1.6. Kubernetes Architecture Kubernetes Development
 - 1.6.1. Tools for K8s Development
 - 1.6.2. Imperative Mode Vs. Declarative Mode
 - 1.6.3. Application Deployment and Exposure
- 1.7. Kubernetes in Enterprise Environments
 - 1.7.1. Data Persistence
 - 1.7.2. High Availability, Scaling and Networking
 - 1.7.3. Kubernetes Security
 - 1.7.4. Kubernetes Management and Monitoring





- 1.8. K8s Distributions
 - 1.8.1. Deployment Environment Comparison
 - 1.8.2. Deployment on GKE, AKS, EKS or OKE
 - 1.8.3. On Premise Deployment
- 1.9. Rancher and Openshift
 - 1.9.1. Rancher
 - 1.9.2. Openshift
 - 1.9.3. Openshift: Configuration and Application Deployment
- 1.10. Kubernetes Architecture and Containers Updates
 - 1.10.1. Open Application Model
 - 1.10.2. Tools for Deployment Management in Kubernetes Environments
 - 1.10.3. References to Other Projects and Trends



Update your knowledge on deployment of applications and continue your professional development”

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 Deployment of Applications Using Kubernetes and Docker 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”

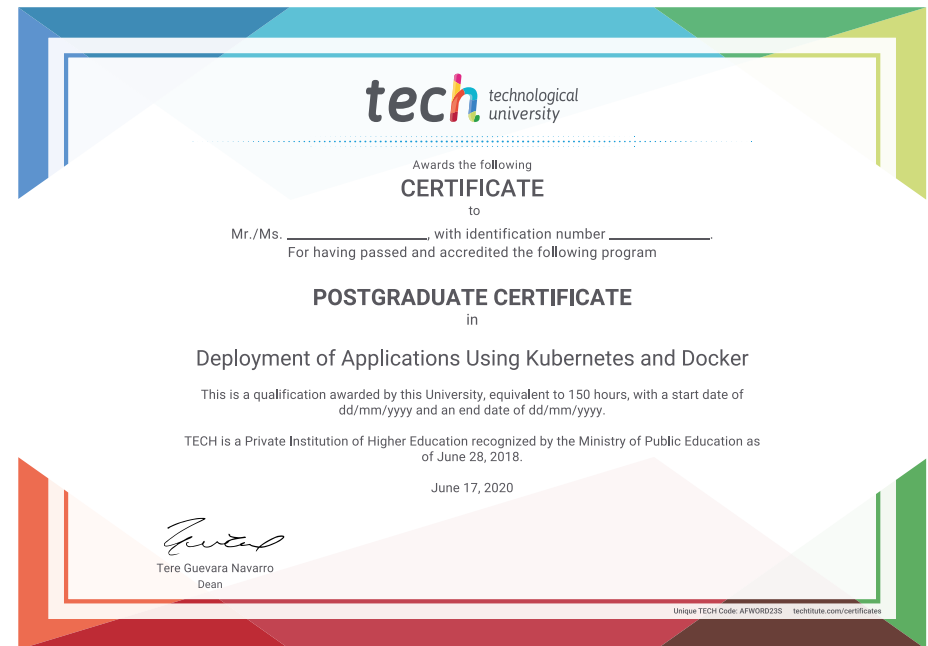
This **Postgraduate Certificate in Deployment of Applications Using Kubernetes and Docker** contains the most complete and up-to-date program on the market.

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 Deployment of Applications Using Kubernetes and Docker**

Official N° of Hours: **150 h.**



*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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