

# Postgraduate Certificate Cloud Infrastructure Operation as Code (IAC)



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- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/information-technology/postgraduate-certificate/cloud-infrastructure-operation-code-iac](http://www.techtute.com/us/information-technology/postgraduate-certificate/cloud-infrastructure-operation-code-iac)

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# 01

# Introduction

Infrastructure Operation as Code (IAC) makes infrastructure deployments easily modifiable, secure and reproducible. Carrying it out uses specific tools and practices that require advanced knowledge and skills that are in high demand by companies. This is the reason why TECH has designed a program that seeks to develop the skills and expand the knowledge of students in this area, through delve into topics such as strategies, tools and future trends in the field of TSI. All this in a 100% online mode that allows students to organize their studies and schedules with total freedom, without the need to travel and being able to access all the content with any device with an Internet connection.





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*Access all the content from day one and  
become an expert in IAC”*

Infrastructure Operations as Code (IAC) renews the way application infrastructures are managed and has multiple advantages such as making infrastructure deployments reproducible, reliable and modifiable in an agile and simple way. But to be able to master the configuration of servers, networks and other resources as code requires a series of specific and precise skills and knowledge in the field, which are increasingly in demand by all types of companies.

This is the reason why TECH has designed a Postgraduate Certificate in Cloud Infrastructure Operation as Code, to provide students with the skills and knowledge necessary to master the tools and manage the IAC in the most efficient way possible. And this, through delve into such relevant topics as strategies, tools, evolution and future trends in IAC.

All this through a 100% online mode that allows the user to organize freely, without any time limits or need for travel and the ability to access all content with any device with internet connection, whether Tablet, mobile or computer. In addition, complete multimedia content, updated information and the most innovative teaching tools are offered.

This **Postgraduate Certificate in Cloud Infrastructure Operation as Code (IAC)** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ The development of practical cases presented by experts in Cloud Infrastructures Operation as Code (IAC)
- ◆ 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 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



*Reach your most demanding goals,  
with a unique and unrepeatabe  
program at IAC"*

“

*Gain new knowledge and specific skills in IAC Tools”*

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.

*Reach your best version as a Cloud Infrastructure professional and stand out in a sector in constant growth.*

*Enroll now and learn about all the advantages and challenges you will face as a TSI professional.*



# 02 Objectives

The objective of this Postgraduate Certificate is to provide students with the ability to implement and manage Infrastructure as Code in the most efficient way possible. All this, through the most innovative tools, the most complete content and the most updated information that can be found in the academic market, to ensure the user's professional success.





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*TECH's goal is to give you the opportunity to succeed in your professional area, in an easy and fast way”*



## General Objectives

- ◆ Develop specialized knowledge about what infrastructures are and what motivations exist for their transformation to the cloud
- ◆ Acquire the skills and knowledge necessary to implement and manage IaaS solutions effectively
- ◆ Acquire specialized knowledge to add or remove storage and processing capacity quickly and easily, enabling you to adapt to fluctuations in demand
- ◆ Examine the scope of *Network DevOps*, demonstrating that it is an innovative approach for network management in IT environments
- ◆ Understand the challenges faced by an enterprise in *Cloud* governance and how to address them
- ◆ Use security services in Cloud environments such as, *Firewalls*, *SIEMS* and threat protection, to secure applications and services
- ◆ Establish best practices in the use of *Cloud* Services and the main recommendations when using them
- ◆ Increase user efficiency and productivity: by enabling users to access their applications and data from anywhere and on any electronic device, *VDI* can improve user efficiency and productivity
- ◆ Gain specialized knowledge about *Infrastructure as Code*
- ◆ Identify key points to demonstrate the importance of investing in backup and monitoring in organizations





## Specific Objectives

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- ◆ Compile the main tools for Infrastructure-as-Code management and their main strengths
- ◆ Determine the different approaches proposed by Infrastructure as Code depending on the way you try to define the resources
- ◆ Implement and manage test and production environments efficiently using Infrastructure as Code
- ◆ Use versioning and change control techniques for Infrastructure as Code

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*Enhance your professional profile in the area of IAC Tools, with total freedom of organization and with the convenience of a 100% online modality"*



# 03

## Course Management

The management of this Postgraduate Certificate and the teaching team have been selected under the strict search for the highest quality of the program. Therefore, we have chosen professional experts in the field, who have outstanding careers in Cloud Infrastructure Operation as Code and who have poured their experience and expertise in the syllabus. In this way, we are able to offer the most complete and innovative content and materials possible.





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*Thanks to TECH, you will enjoy the most complete and up-to-date content in IAC, which has been designed by renowned experts in this area"*

## 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





# 04

# Structure and Content

The structure and content of this syllabus have been designed under the complete dedication of the outstanding professionals that make up TECH's team of experts. They have been based on their extensive knowledge, extensive experience and the most efficient teaching methodology, Relearning, which gives students the full guarantee of being able to assimilate the knowledge in a natural, easy and accurate way





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*A comprehensive syllabus and content of the highest quality, which is only possible at TECH”*

## Module 1. Infrastructure Operation-as-Code (IAC)

- 1.1. Infrastructure as-Code (IAC)
  - 1.1.1. IaC, Infrastructure as Code
  - 1.1.2. Emotions Management Evolution
  - 1.1.3. Advantages of IaC
- 1.2. Strategies for IAC Definition
  - 1.2.1. Requirements Analysis
  - 1.2.2. Imperative Definition
  - 1.2.3. Declarative Definition
- 1.3. IAC Tools
  - 1.3.1. IAC Objectives
  - 1.3.2. Proprietary Tools
  - 1.3.3. Third-party Tools
- 1.4. Evolution of Infrastructure as Code
  - 1.4.1. IaC in Kubernetes
  - 1.4.2. Platform as Code
  - 1.4.3. Compliance as Code
- 1.5. IAC in Devops
  - 1.5.1. Flexible Infrastructures
  - 1.5.2. Continuous Integration
  - 1.5.3. Pipelines as Code
- 1.6. IAC - VPC - Proprietary tools
  - 1.6.1. Design of a VPC
  - 1.6.2. Deployment of the Solution
  - 1.6.3. Validation and Analysis
- 1.7. IAC - Serverless - Proprietary tools
  - 1.7.1. Design of a Serverless Solution
  - 1.7.2. Deployment of the Solution
  - 1.7.3. Validation and Analysis



- 1.8. IAC-VPC- Third-Party Tools
  - 1.8.1. Design of a VPC
  - 1.8.2. Deployment of the Solution
  - 1.8.3. Validation and Analysis
- 1.9. IAC - *Serverless*- Third-Party Tools
  - 1.9.1. Design of a *Serverless* Solution
  - 1.9.2. Deployment of the Solution
  - 1.9.3. Validation and Analysis
- 1.10. IAC - Comparison Future Trends
  - 1.10.1. Valuation of Proprietary Solutions
  - 1.10.2. Valuation of Third-Party Solutions
  - 1.10.3. Future lines

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*Reach your full potential  
as an IAC expert and stand  
out in the professional  
arena in just a few weeks”*



# 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.





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*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 Cloud Infrastructure Operation as Code (IAC) guarantees students, in addition to the most rigorous and up to date education, access to a Postgraduate Certificate issued by TECH Global University.





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*Successfully complete this program  
and receive your university qualification  
without having to travel or fill out  
laborious paperwork”*



This program will allow you to obtain the **Postgraduate Certificate in Cloud Infrastructure Operation as Code (IAC)** endorsed by TECH Global University, the largest digital university in the world.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international educational framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of joint tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuous education and professional updating that guarantees the acquisition of competencies in its area of knowledge, conferring a high curricular value to the student who completes the program.

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Accreditation: **6 ECTS**





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