Postgraduate Certificate
Back-end development in Web Applications

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Postgraduate Certificate
Back-end development
in Web Applications

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

Website: **www.techtitute.com/us/information-technology/postgraduate-certificate/back-end-development-web-applications**

Index

01
Introduction

According to data from recent IT industry analysis studies, job opportunities for software programmers are expected to increase significantly in the coming years. The role of a back-end developer is a critical skill in this field. The development techniques are highly transferable and allow professionals to work remotely or in a wide variety of industries. That is why TECH, together with a team of reputable faculty, has created this Postgraduate Certificate where students will be introduced to the most prominent development technologies in the industry. In addition, it is a great academic proposal to acquire the best and most appropriate tools and technologies through a unique and 100% online training.

Become a world-class back-end developer with the most comprehensive online degree in the current academic landscape. Only in TECH"

The back-end works as the internal architecture of the site, ensuring that all the elements develop the correct function. And the fact is that, with the advance of new technologies, the percentage of companies that carry out their functions and projects supported by a website are countless. Therefore, this leads to understand that the field of information technology has an international component, which opens multiple job options for professionals who bet decisively on this sector.

For this reason, TECH has developed this 100% online Postgraduate Certificate, where the graduate will be able to develop application interfaces (APIs) of different types while deepening in the development of containerized applications. All this will enable them to expertly handle app and website errors, which is essential for the correct implementation and execution of any technological plan.

One of the advantages of being part of this unique academic opportunity is based on the convenience and adaptability provided. TECH is a pioneer in the implementation of the Relearning pedagogical methodology, which provides didactic and multimedia content repeatedly to expand and improve the assimilation of concepts. All of this is complemented with case studies refuted by the best experts in the field. It is therefore the perfect opportunity to combine learning with personal life.

This **Postgraduate Certificate in Back-end Development in Web Applications** 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 Computer, Software, Systems
- The graphic, schematic, and practical contents which provide prestigious 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 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

Stand out in one of the fastest growing and expanding sectors at the best online university in the world"

Drive your career towards change and be part of the technological growth. Enroll now"

Expand your knowledge of container development and deployment with containers and update yourself thanks to the innovative content that TECH provides you.

Study wherever and whenever you want without sacrificing the rest of your personal priorities.

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

The multimedia content, developed with the latest educational technology, will provide professionals with situated and contextual learning, i.e., a simulated environment that will provide immersive training, designed for training oneself 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 throughout the program. For this , purpose students will be assisted by an innovative interactive video system developed by renowned experts.

02
Objectives

This Postgraduate Certificate has been designed to equip students with the skills and abilities necessary to become a reputable back-end computer scientist. As students progress through the academic pathway, they will explore scalability and load balancing as well as delve into the use of performance measurement and testing tools. This learning will take place will take place in only 6 weeks with the best pedagogical option in the market.

For TECH you are their target, be yours and be at the forefront of IT"

General Objectives

- Generate specialized knowledge on advanced web architecture

- Address the development of the Back-end part of the web application, reviewing the available technologies, integration mechanisms such as APIs, message and event queues, deployment and optimization processes

- Develop the necessary steps for the creation of the Front-end of the web application, taking into account programming aspects as well as accessibility requirements, multi-language and multi-platform support

- Create personalized experiences, monitor and monetize the use of the website

- Consolidate application design and development best practices with a project management that favors continuous iteration, integration and deployment

Specific Objectives

◆ Examine Back-End-end development technologies and patterns

◆ Develop application interfaces (APIs) of various types

◆ Analyze integration mechanisms, such as message and event queues

◆ Deepen in the development of containerized applications

◆ Establish the steps to deploy and run applications on the back-end

◆ Identify and resolve back-end performance issues

◆ Examine the latest trends in application development

You will achieve your goals thanks to our tools and you will be accompanied along the way by the best experts in Systems, Computing and Software"

Course Management

In order to provide the highest education for all, TECH stands out for having an extensive and renowned group of experts in Computer Science, which ensure an updated and functional learning that conforms this degree. These professionals in charge of directing this Postgraduate Certificate have a recognized experience in the area of Communication Technology as well as have excelled in projects of nationally and internationally recognized companies. All this is a guarantee for the graduate who wishes to obtain an advanced education from the best.

```
23    #
24    # experiment
25    # observations:  - an Array of Observations, in ex
26    # control:          - the control Observation
27    #
28    def initialize(experiment, observations = [], control = nil)
29      @experiment   = experiment
30      @observations = observations
31      @control      = control
32      @candidates   = observations - [control]
33      evaluate_candidates
34
35      freeze
36    end
37
38    # Public: the experiment's context
39    def context
40      experiment.context
41    end
42
43    # Public: the name of the ex
44    def experiment_name
45      experiment.name
46    end
47
48    # Public: wa
49    def match
lib/scienti
```

"
Learn from the best in Back-End Web Application Development and evolve in Communication Technology"

Management

Dr. Pantaleón García del Valle, Eduardo

- Solutions Architect at Amazon Web Services (AWS)
- Solutions Architect at Liferay, Inc
- Technical Manager at Jungheinrich AG
- Senior Software Engineer and Team Manager at Liferay
- Project Manager at Protecmedia
- Organization and delivery of online technical webinars within the AWS Customer Proficiency Plan program
- Member of the Alumni Mentoring program at Carlos III University of Madrid, for career advice to students and recent graduates
- Graduated in Telecommunication Engineering from Carlos III University of Madrid
- PhD in Software, Systems and Computing from the Polytechnic University of Madrid
- Master's Degree in Computer Languages and Systems from the National University of Distance Education (UNED)
- Executive Data Science Specialization from Johns Hopkins University

Professors

Ms. Portalatín Romero, Isabel

- IT Engineer
- Responsible for offers in the area of Information Technology to different public and private organizations
- Online teacher in different Postgraduate Certificate in Professional Training programs
- Technical Engineering in Computer Management by the Polytechnic School of Computer Science of the University of Extremadura

A unique, key, and decisive training experience to boost your professional development"

04

Structure and Content

The syllabus developed for this Postgraduate Certificate is composed of 1 Module that will provide the graduate with the most relevant knowledge in the Back-end area. Likewise, the graduate will acquire the necessary didactic resources that will position them as experts in the sector. For this reason, this Postgraduate Certificate is composed by a very varied agenda focused on the easy assimilation of the concepts around programming languages, the development of REST Application Programming Interfaces (API), or the latest trends in this area. All this, endowed with complementary supports that help in learning in the most updated and truthful way.

"

A curriculum tailored to your needs with guaranteed employability in the technology sector"

Module 1. Application back-end development

1.1.   Back-end development technologies
    1.1.1.   Programming Languages
    1.1.2.   Frameworks and libraries
    1.1.3.   Dependency management
1.2.   Back-End Development Patterns
    1.2.1.   SOLID
    1.2.2.   Microservices
    1.2.3.   API-first
1.3.   Development of REST Application Programming Interfaces (APIs)
    1.3.1.   Statefulness and statelessness
    1.3.2.   HTTP methods and responses
    1.3.3.   Pagination, documentation and versioning
1.4.   Other types of APIs
    1.4.1.   GraphQL
    1.4.2.   Websockets
    1.4.3.   gRPC
1.5.   Message Queuing
    1.5.1.   Message Queuing
    1.5.2.   Patterns and Case Uses
    1.5.3.   Available solutions
1.6.   Event-driven architectures
    1.6.1.   Event-driven architectures
    1.6.2.   Event flow layers
    1.6.3.   Patterns and Case Uses
1.7.   Application development with containers
    1.7.1.   Containers
    1.7.2.   Development and deployment with containers
    1.7.3.   Container management tools
1.8.   Deployment and execution of back-end applications
    1.8.1.   Packaging
    1.8.2.   Web Servers
    1.8.3.   Application Servers

You are in front of a Postgraduate Certificate adapted to your needs, you set your own study schedule"

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.

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.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

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.

01 learning from evidence

02 relearning from evidence

08 competencies testing (retesting)

03 testing

07 case based learning through storytelling

04 learning from an expert

06 Von-Restorff effect

05 neurocognitive context dependent learning

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.
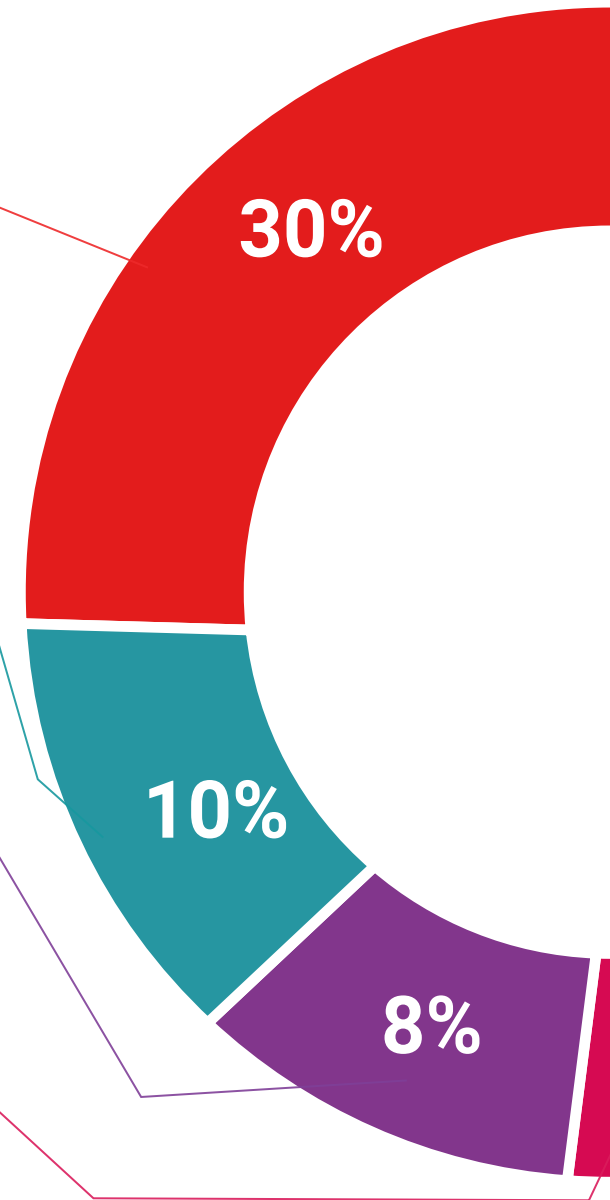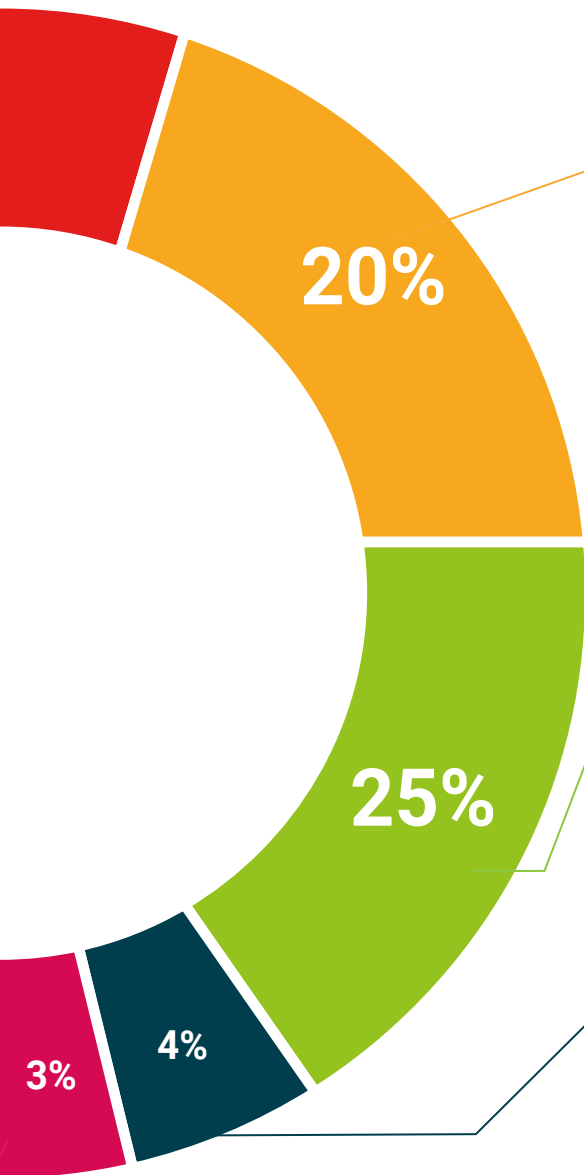
Practising Skills and Abilities

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.

30%

10%

8%

20%

25%

4%

3%

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 Back-end Development in Web Applications 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 Back-end Development in Web Applications** 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 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 Back-end development in Web Applications**

Official Nº of Hours: **150 h.**

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Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____ .
For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Back-end development in Web 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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