Postgraduate Diploma
Web Applications Programming

tech *technological university*

Postgraduate Diploma
Web Applications Programming

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

Website: **www.techtitute.com/pk/information-technology/postgraduate-diploma/postgraduate-diploma-web-applications-programming**

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01
Introduction

Web-based IT solutions are increasingly present in everyday life. From a platform for the management of a public administration body, to complex tasks such as the handling of heavy machinery, where these applications are in urgent demand and with them the professionals trained for their implementation. From this context, TECH has designed this Postgraduate Certificate where students will have access to the fundamentals and innovations of Front-End and Back-end development for these types of digital tools. A 100% online program that will be accessible from any device connected to the Internet, without rigid schedules and the teaching advice of great experts in the field.

"

A 100% online Postgraduate Certificate through which you will be able to build an advanced web application: from planning to deployment"

Generating large amounts of code manually can be a tedious and error-prone task for programmers. As web application projects grow, it becomes more complex to maintain and update that code as well. This is why Generative Artificial Intelligences (AI) in the computing field have become an important solution that allows to generate fragments and even complete codes in an autonomous way. However, although these development technologies offer multiple advantages, they require human supervision to ensure the quality and safety of their work.

In order to work in this emerging area, it is imperative to be continuously updated on these task automation mechanisms and other related technologies. In response to this situation, TECH provides the study of this very complete Postgraduate Certificate. In the program, students will address the creation of interfaces and client-server communication. Likewise, they will delve into web accessibility, standards and regulations. In addition to analyzing multiplatform supports and other means to optimize the performance of the Front-End.

Throughout the course, you will also examine low-code/no-code systems and the main assistances that can come from a Generative IA. In addition, the low-code/no-code container-based applications will also be described in detail. At the end of the Postgraduate Certificate, the computer scientists will have acquired all the skills to carry out a complete web application project.

For this learning, they will have a 100% online platform and a variety of multimedia resources. At the same time, TECH's Relearning methodology will favor the development of competencies and the mastery of complex concepts in a faster, more efficient and flexible way. All of this with a program that will not be subject to rigid schedules so that each graduate can choose the time and place where they will focus on this Postgraduate Diploma.

This **Postgraduate Diploma in Web Applications Programming** 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 Software, Systems and Computing
- The graphic, schematic and practical contents of the programprovide theoretical and practical information on those 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

You will analyze trends in next-generation software development, low-code/no-code systems and Generative AI support"

"A Postgraduate Certificate that will allow you to download your academic materials or analyze them on the portable device of your choice"
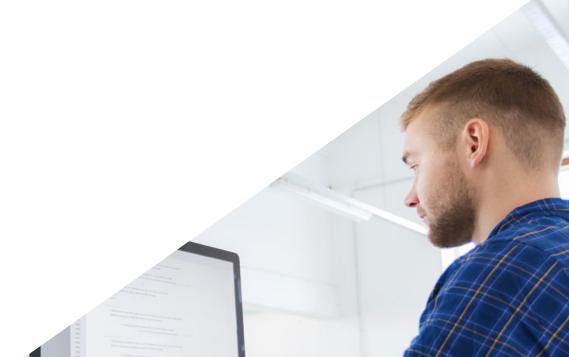
This Postgraduate Diploma will be available to you 24 hours a day, 7 days a week, so that you can combine it with your other obligations.

The intensive syllabus of this program will update all your skills with a masterful theoretical and practical approach.
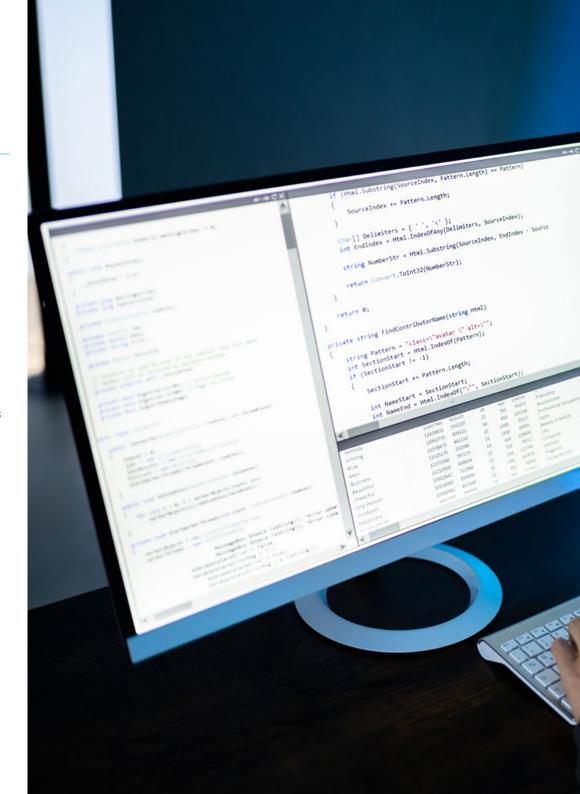
The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

Its 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 an immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby students 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 created by renowned and experienced experts.

02
Objectives

This Postgraduate Diploma is designed to equip computer scientists with the essential skills for the creation of innovative and functional web applications. Throughout its academic modules they will have access to the tools, techniques and strategies that underpin software development. Specifically, professionals will delve into the generation of projects through Artificial Intelligence and other advanced variants. Because of this, at the end of this syllabusall graduates will be ready to face the main challenges of the professional field.

Get ready to gain practical knowledge and take your web development skills to the next level with this Postgraduate Diploma"

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

- Analyze in depth the aspects related to the security of web applications, with a special focus on the most common attacks and the prevention, detection and mitigation mechanisms

- Review security recommendations and regulations

- Address security as one of the pillars of advanced web architectures

- Establish cloud computing as a growing alternative for the development and deployment of web applications

- Review the main features and vendors, planning migration scenarios and incorporating new roles and processes in project management

Specific Objectives

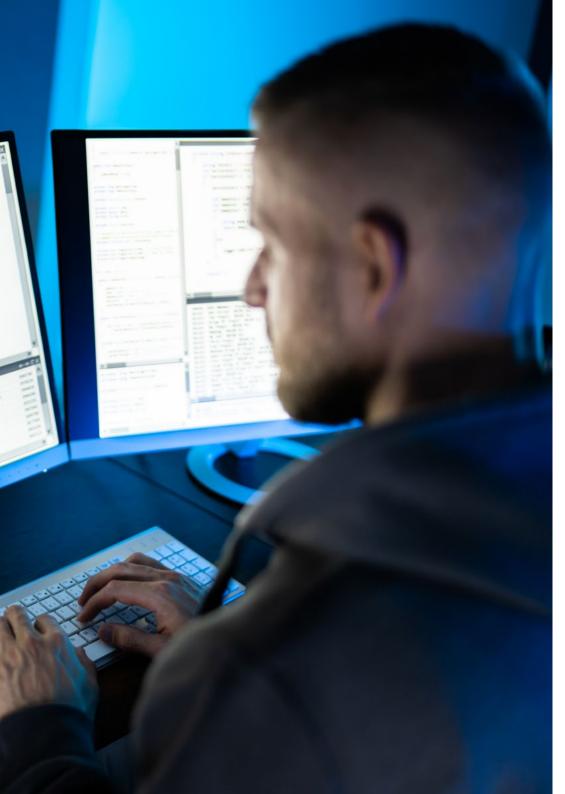### Module 1. Front-end Development in Web Applications
- Examine Front-end development technologies and patterns
- Establish how client-server communication works
- Determine the options for managing the state of a web application
- Analyze the user interface development process
- Design advanced user experiences with multi-platform support
- Apply accessibility criteria and multi-language support
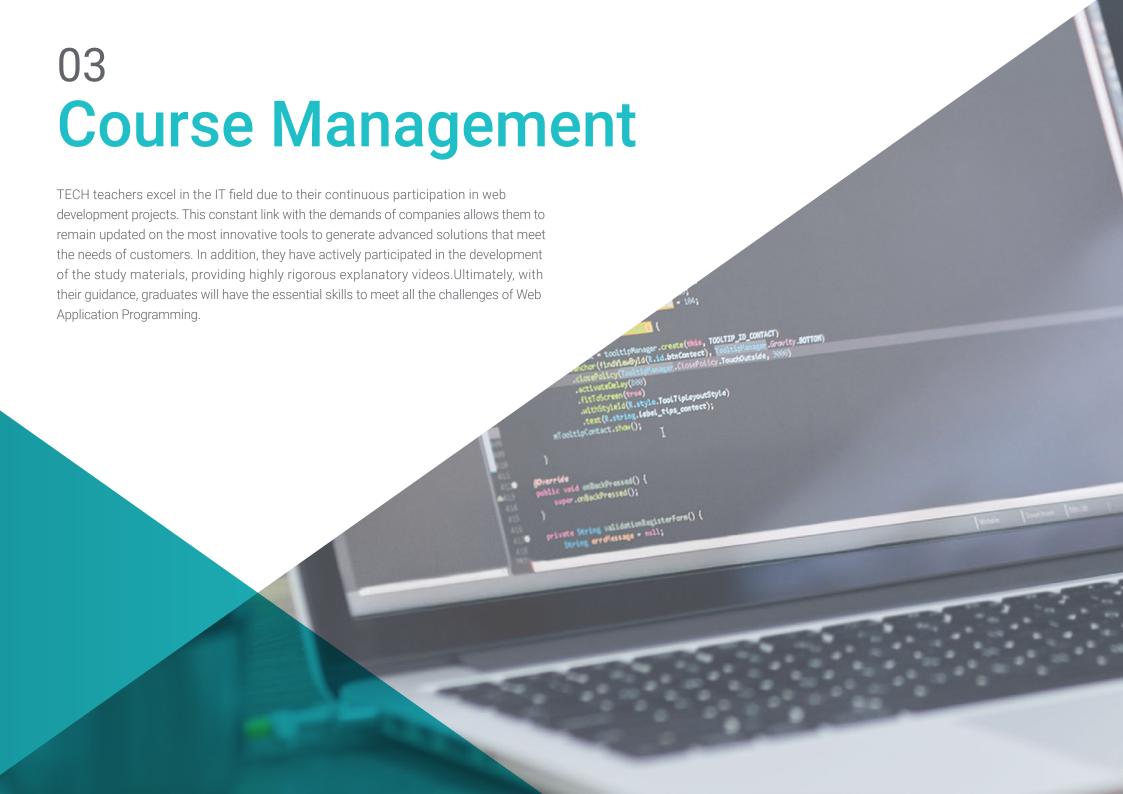- Identify and solve Front-end performance issues

Module 2. Application of back-end development
- Examine Back-End development technologies and patterns
- Develop application interfaces (APIs) of various types
- Analyze integration mechanisms, such as message and event queues
- Delve into 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

Module 3. Building an Advanced Web Application
- Practice the complete process of developing a web application
- Analyze requirements and make technological and managerial decisions
- Set up a development platform that can also be used for future projects
- Discover, through trial and error, the challenges of real work with web applications
- Validate the advantages of resiliency and observability-oriented design
- Monitor and maintain a real application
- Have a reference project for future projects as a reference

03
Course Management

TECH teachers excel in the IT field due to their continuous participation in web development projects. This constant link with the demands of companies allows them to remain updated on the most innovative tools to generate advanced solutions that meet the needs of customers. In addition, they have actively participated in the development of the study materials, providing highly rigorous explanatory videos.Ultimately, with their guidance, graduates will have the essential skills to meet all the challenges of Web Application Programming.

All the teachers of this certification program have experience in the development of software and computer applications. Enroll now"

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. Sánchez 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.

Mr. Orbezo Gutiérrez, Alberto

- Senior Software Developer at Babel
- Programmer and analyst at Álamo Consulting
- IT Consultant

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

Structure and Content

This Postgraduate Diploma, consisting of three academic modules, delves into the Front-End Development of Web applications by taking a tour through the different frameworks and tools. It also addresses the particularities of user interfaces, client-server communication and the means to optimize project performance. It also covers the control of APIs, containers and the main servers. The last point of this syllabus will guide the students in the construction of a web application, from its planning to its evolution and deployment. All this through TECH's disruptive 100% online methodology.

An exclusive and intensive Postgraduate Diploma where your learning will be supported by multimedia resources such as explanatory videos and interactive summaries"

Module 1. Front-end Development in Web Applications

1.1. Front-end Web Application Development Technologies
    1.1.1. HTML5
    1.1.2. CSS
    1.1.3. DOM and JavaScript
1.2. Front-end Development Patterns
    1.2.1. Multiple Page Applications
    1.2.2. Single Page Applications
    1.2.3. Progressive Web Applications
1.3. Development of User Interfaces (UI) in Web Applications
    1.3.1. Frameworks and Front-end development tools
    1.3.2. Separation of responsibilities
    1.3.3. Component-oriented architectures
1.4. Client-Server Communication
    1.4.1. Request flow
    1.4.2. Synchronous communication
    1.4.3. Asynchronous communication
1.5. Status Control in Web Applications
    1.5.1. Global and shared state in Web Applications
    1.5.2. State Management Patterns (Redux, MobX, Recoil)
    1.5.3. Use cases and recommendations
1.6. User Experience (UX) in Web Applications
    1.6.1. User-Centered Design
    1.6.2. Information Architecture
    1.6.3. Design and prototyping tools
1.7. Web Accessibility
    1.7.1. Web accessibility standards and regulations (ADA, WCAG, European Accessibility Act).
    1.7.2. Accessible Rich Internet Applications (ARIA)
    1.7.3. Web accessibility tools
1.8. Multi-platform support
    1.8.1. Mobile first and responsive design
    1.8.2. Native development tools
    1.8.3. Hybrid development tools

Module 2. Application back-end development

Module 3. Building an Advanced Web Application

This 100% online Postgraduate Diploma offers you a comfortable learning experience, from home, avoiding any unnecessary travel. 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.

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

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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 Diploma in Web Application Programming guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in Web Applications Programming** 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 Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Web Application Programming**

Official Nº of Hours: **450 h.**

tech technological university

Awards the following
CERTIFICATE
to

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

POSTGRADUATE DIPLOMA
in

Web Applications Programming

This is a qualification awarded by this University, equivalent to 450 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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