

# Postgraduate Diploma Software Development for Web Applications



## Postgraduate Diploma Software Development for Web Applications

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-software-development-web-applications](http://www.techtute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-software-development-web-applications)

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# 01

# Introduction

This high-quality program delves into *Software Development* for web applications, with the help of professionals with years of experience in the sector. During these months of studying you will learn the *software* development process, under the different programming models and the object-oriented programming paradigm; you will acquire the essential knowledge related to the professional responsibility derived from project management and you will learn how to use the DOM programming interface for HTML and XML documents, in order to modify their structure, style and content; among many other issues that you will address during this program.

A complete program that will allow you to stand out and specialize in a growing sector with high labor competition.



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*Learn to design, evaluate and manage engineering projects thanks to this high-quality program”*



This Postgraduate Diploma specializes students in *Software Development for Web Applications*, with the aim of providing them with the knowledge and tools required for the design and development of complex systems which provide the answer to established problems.

The main objective of this program is that the student gains the ability to incorporate substantial qualitative improvements, providing new solutions to specific problems that arise in *software* development.

With this complete program, the student will learn the procedures and techniques to improve the appearance of a document written in HTML; will master the interaction processes with the client using: Forms, cookies and session management, as well as acquiring the knowledge required for the correct application of agile methodologies in *software* development such as Scrum, among others.

With this program, the student will have access to the most advanced teaching resources and will have the opportunity to study a program that brings together the most in-depth knowledge in the field. A group of highly scientifically qualified professors with extensive international experience will provide students with the most complete and up-to-date information on the latest advances and techniques in *Software* and Computer Systems Engineering.

The syllabus covers the main current topics in Software and Computer Systems Engineering in such a way that whoever masters them will be prepared to work in this field. Therefore, it is not just another diploma in your backpack, but a real learning tool to approach the topics of the specialty in a modern, objective way and with the ability to make a judgment based on today's most cutting-edge information.

It should be noted that as this is a 100% online Postgraduate Diploma, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

If they want to differentiate themselves from others and be capable of designing complex systems engineering projects, this is the program for them.

This **Postgraduate Diploma in Software Development for Web Applications** contains the most complete and up to date educational program on the market. The most important features include:

- ♦ The development of case studies presented by experts in *Software Development for Web Applications*
- ♦ 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
- ♦ Special emphasis on innovative methodologies in *Software Development for Web Applications*
- ♦ 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



*Completing this Postgraduate Diploma will place software and computer systems engineering professionals at the forefront of the latest developments in the sector"*

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*This Postgraduate Diploma is the best investment you can make when selecting a refresher program in the field of Software Development for Web Applications. We offer you quality and free access to content"*

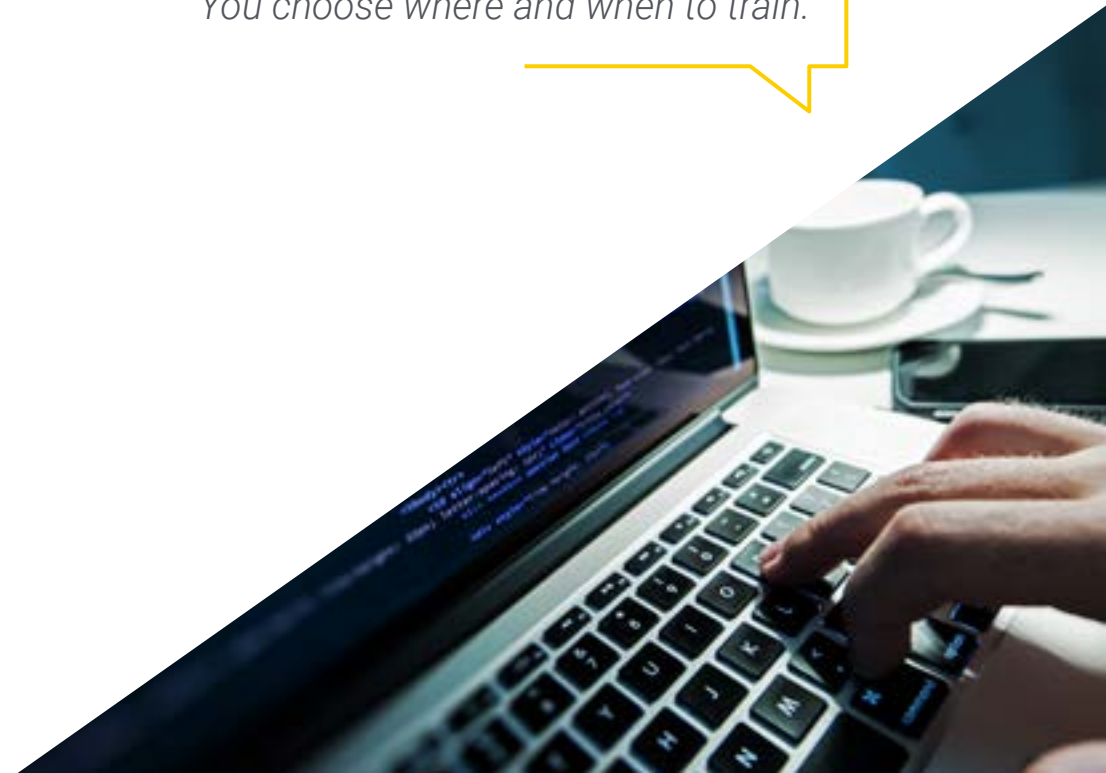
The program includes in its teaching staff professionals from the field of Software Development for Web Applications, who contribute the experience of their work to this program, as well as renowned specialists from leading societies and prestigious universities.

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 learning programmed to train 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, the professional will be assisted by an innovative interactive video system developed by renowned and experienced experts Software Development for Web Applications.

*This program has the best educational resources that can be accessed online or downloaded, to make it easier for you to manage your studies and effort.*

*This 100% online Postgraduate Diploma will allow you to combine your studies with your professional work. You choose where and when to train.*



# 02 Objectives

The Postgraduate Diploma in *Software Development* for Web Applications is aimed at facilitating the performance of the professional to acquire knowledge of the main developments in this field, which will allow them to practice their profession with the highest quality and professionalism.





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*Our goal is for you to become the best professional in your sector. And for this we have the best methodology and content"*



## General Objectives

- ♦ Acquire new knowledge in *Software* and Computer Systems Engineering.
- ♦ Acquire new skills in terms of new technologies and the latest *software* developments.
- ♦ Process the data generated in *Software* and Computer Systems Engineering activities.



*Improving your skills in the field of Software Development for Web Applications will allow you to be more competitive. Continue your studies and give your career a boost"*



## Specific Objectives

### Module 1. Methodologies, Development and Quality in Software Engineering

- ♦ Know the basics of *Software* Engineering, as well as the set of rules or ethical principles and professional responsibility during and after development.
- ♦ Understand the *software* development process under the different programming models and the object-oriented programming paradigm.
- ♦ Understand the different types of application modeling and design patterns in the Unified Modeling Language (UML).
- ♦ Acquire the knowledge required for the correct application of agile methodologies in *software* development such as Scrum, among others
- ♦ Know the *Lean* development methodology to identify the activities that do not add value to the process, in order to obtain a higher quality *software*.

### Module 2. Software Project Management

- ♦ Know the fundamental concepts of project management and the project management life cycle.
- ♦ Understand the different stages of project management such as initiation, planning, *stakeholder* management and scoping.
- ♦ Learn schedule development for time management, budget development and risk response
- ♦ Understand how quality management works in projects, including planning, assurance, control, statistical concepts and available tools.
- ♦ Understand the functioning of the processes of procurement, execution, monitoring, control and closure of a project.
- ♦ Acquire the essential knowledge related to the professional responsibility derived from project management.

### Module 3. Web-Client Computing

- ◆ Understand the process of creating web content through HTML markup language.
- ◆ Understand the procedures and techniques to improve the appearance of a document written in HTML.
- ◆ Know the evolution of the Javascript language.
- ◆ Acquire the necessary knowledge for the development of web client-side applications.
- ◆ Develop applications with complex structures, by using the different procedures, functions and objects that integrate JavaScript.
- ◆ Learn how to use the DOM programming interface for HTML and XML documents to modify their structure, style and content.
- ◆ Understand the use of event-based flow and *listeners*, as well as the use of modern *toolkit* and alignment systems.
- ◆ Know the concept of web usability, its advantages, principles, methods and techniques to make a web site usable by the user.
- ◆ Establish knowledge of web accessibility, its importance in current digital platforms, methodologies, norms, standards and determine compliance

### Module 4. Web Server Computing

- ◆ Understand the basic, intermediate and advanced concepts of the PHP language for the implementation of server-side applications.
- ◆ Acquire the necessary knowledge for data modeling, relationships, keys and normalizations.
- ◆ Understand the construction of the logical data model, the specification of tables, columns, keys and dependencies, as well as the knowledge necessary for the physical handling of data, file types, access modes and file organization.
- ◆ Learn how to integrate applications developed in PHP with MariaDB and MySQL databases.
- ◆ Master customer interaction processes using: *Forms*, cookies and session management
- ◆ Understand the Model View Controller View (MVC) *software architecture* that separates an application's data, user interface, and control logic into three distinct components
- ◆ Acquire the skills for the use of web services using XML, SOA and *REST*

03

# Course Management

This academic program includes the most specialized teaching staff in the current educational market. They are specialists selected by TECH to develop the whole syllabus. In this way, starting from their own existence and the latest evidence, they have designed the most up-to-date content that provides a guarantee of quality in such a relevant subject.



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*TECH offers the most specialized  
teaching staff in the field of study.  
Enroll now and enjoy the quality  
you deserve”*



## International Guest Director

Darren Pulsipher is a highly experienced software architect, an innovator with an outstanding international track record in software and firmware development. In fact, he possesses highly developed communication, project management and business skills, which have enabled him to lead major global initiatives.

He has also held senior positions of great responsibility throughout his career, such as Chief Solution Architect for the Public Sector at Intel Corporation, where he has promoted modern business, processes and technologies for customers, partners and users in the public sector. In addition, he founded Yoly Inc. where he has also served as CEO, working to develop a social network aggregation and diagnostic tool based on Software as a Service (SaaS), using Big Data and Web 2.0 technologies.

Additionally, he has served in other companies, as Senior Director of Engineering, at Dell Technologies, where he led the Big Data in the Cloud Business Unit, leading teams in the United States and China for the management of large projects and the restructuring of business divisions for their successful integration. He has also worked as Chief Information Officer at XanGo, where he managed projects such as Help Desk support, production support and solution development.

Among the many specialties in which he is an expert, Edge to Cloud technology, cybersecurity, Generative Artificial Intelligence, software development, networking technology, cloud-native development and the container ecosystem stand out. Knowledge he has shared through the “Embracing Digital Transformation” podcast and weekly newsletter, which he produced and hosted, helping organizations successfully navigate digital transformation by leveraging people, processes and technology.



## Mr. Pulsipher, Darren

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- Chief Solution Architect for Public Sector at Intel, California, United States
- Presenter and Producer of “Embracing Digital Transformation”, California
- Founder and CEO at Yoly Inc., Arkansas
- Senior Director of Engineering at Dell Technologies, Arkansas
- Chief Information Technology Officer, XanGo, Utah
- Senior Architect at Cadence Design Systems, California
- Senior Project Process Manager at Lucent Technologies, California
- Software Engineer at Cemax-Icon, California
- Software Engineer at ISG Technologies, Canada
- MBA in Technology Management from the University of Phoenix, Phoenix, California
- B.S. in Computer Science and Electrical Engineering from Brigham Young University

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

04

# Structure and Content

The structure of the contents has been designed by the best professionals in the sector, with extensive experience and recognized prestige in the profession, who are aware of the benefits that the latest educational technology can bring to higher education.



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*We have the most complete and up-to-date scientific program on the market. We strive for excellence and for you to achieve it too"*

## Module 1. Methodologies, Development and Quality in Software Engineering

- 1.1. Introduction to *Software Engineering*
  - 1.1.1. Introduction
  - 1.1.2. The *Software* Crisis
  - 1.1.3. Differences between Software Engineering and Computer Science
  - 1.1.4. Ethics and Professional Responsibility in *Software Engineering*
  - 1.1.5. *Software* Factories
- 1.2. The *Software* Development Process
  - 1.2.1. Definition
  - 1.2.2. *Software* Process Model
  - 1.2.3. The Unified *Software* Development Process
- 1.3. Object-Oriented *Software* Development
  - 1.3.1. Introduction
  - 1.3.2. Principles of Object Orientation
  - 1.3.3. Object Definition
  - 1.3.4. Class Definition
  - 1.3.5. Object-Oriented Analysis vs. Object-Oriented Design
- 1.4. Model-Based *Software* Development
  - 1.4.1. The Need to Model
  - 1.4.2. *Software* Systems Modeling
  - 1.4.3. Object Modeling
  - 1.4.4. UML
  - 1.4.5. CASE Tools
- 1.5. Application Modeling and Design Patterns with UML
  - 1.5.1. Advanced Requirements Modeling
  - 1.5.2. Advanced Static Modeling
  - 1.5.3. Advanced Dynamic Modeling
  - 1.5.4. Component Modeling
  - 1.5.5. Introduction to Design Patterns with UML
  - 1.5.6. *Adapter*
  - 1.5.7. *Factory*
  - 1.5.8. *Singleton*
  - 1.5.9. *Strategy*
  - 1.5.10. *Composite*
  - 1.5.11. *Facade*
  - 1.5.12. *Observer*
- 1.6. Model-Driven Engineering
  - 1.6.1. Introduction
  - 1.6.2. Metamodeling of Systems
  - 1.6.3. MDA
  - 1.6.4. DSL
  - 1.6.5. Model Refinements with OCL
  - 1.6.6. Model Transformations
- 1.7. Ontologies in *Software Engineering*
  - 1.7.1. Introduction
  - 1.7.2. Ontology Engineering
  - 1.7.3. Application of Ontologies in *Software Engineering*
- 1.8. Agile Methodologies for *Software* Development, Scrum
  - 1.8.1. What is *Software* Agility?
  - 1.8.2. The Agile Manifesto
  - 1.8.3. The Roadmap of an Agile Project
  - 1.8.4. The *Product Owner*
  - 1.8.5. User Stories
  - 1.8.6. Agile Planning and Estimating
  - 1.8.7. Measurements in Agile Development
  - 1.8.8. Introduction to Scrum
  - 1.8.9. The Roles
  - 1.8.10. The *Product Backlog*
  - 1.8.11. The *Sprint*
  - 1.8.12. Meetings
- 1.9. *Lean* Software Development Methodology
  - 1.9.1. Introduction
  - 1.9.2. Kanban
- 1.10. Quality and *Software* Process Improvement
  - 1.10.1. Introduction
  - 1.10.2. Software Measurement





1.10.3. Software Testing

1.10.4. Software Processes Quality Model: CMMI

## Module 2. Software Project Management

2.1. Fundamental Concepts of Project Management and the Project Management Lifecycle

2.1.1. What is a Project?

2.1.2. Common Methodology

2.1.3. What is Project Management?

2.1.4. What is a Project Plan?

2.1.5. Benefits

2.1.6. Project Life Cycle

2.1.7. Process Groups or Project Management Life Cycle

2.1.8. The Relationship between Process Groups and Knowledge Areas

2.1.9. Relationships between Product and Project Life Cycle

2.2. Start-Up and Planning

2.2.1. From the Idea to the Project

2.2.2. Development of the Project Record

2.2.3. Project Kick-Off Meeting

2.2.4. Tasks, Knowledge and Skills in the Startup Process

2.2.5. The Project Plan

2.2.6. Development of the Basic Plan. Steps

2.2.7. Tasks, Knowledge and Skills in the Planning Process

2.3. Stakeholders and Outreach Management

2.3.1. Identify Stakeholders

2.3.2. Develop Plan for Stakeholder Management

2.3.3. Manage Stakeholder Engagement

2.3.4. Control Stakeholder Engagement

2.3.5. The Objective of the Project

2.3.6. Scope Management and its Plan

2.3.7. Gathering Requirements

2.3.8. Define the Scope Statement

2.3.9. Create the WBS

- 2.3.10. Verify and Control the Scope
- 2.4. The Development of the Time-Schedule
  - 2.4.1. Time Management and its Plan
  - 2.4.2. Define Activities
  - 2.4.3. Establishment of the Sequence of Activities
  - 2.4.4. Estimated Resources for Activities
  - 2.4.5. Estimated Duration of Activities
  - 2.4.6. Development of the Time-Schedule and Calculation of the Critical Path
  - 2.4.7. Schedule Control
- 2.5. Budget Development and Risk Response
  - 2.5.1. Estimate Costs
  - 2.5.2. Develop Budget and S-Curve
  - 2.5.3. Cost Control and Earned Value Method
  - 2.5.4. Risk Concepts
  - 2.5.5. How to Perform a Risk Analysis
  - 2.5.6. The Development of the Response Plan
- 2.6. Quality Management
  - 2.6.1. Quality Planning
  - 2.6.2. Assuring Quality
  - 2.6.3. Quality Control
  - 2.6.4. Basic Statistical Concepts
  - 2.6.5. Quality Management Tools
- 2.7. Communication and Human Resources
  - 2.7.1. Planning Communications Management
  - 2.7.2. Communications Requirements Analysis
  - 2.7.3. Communication Technology
  - 2.7.4. Communication Models
  - 2.7.5. Communication Methods
  - 2.7.6. Communications Management Plan
  - 2.7.7. Manage Communications
  - 2.7.8. Management of Human Resources
  - 2.7.9. Main Stakeholders and their Roles in the Projects
  - 2.7.10. Types of Organization
  - 2.7.11. Project Organization

- 2.7.12. The Work Equipment
- 2.8. Procurement
  - 2.8.1. The Procurement Process
  - 2.8.2. Planning
  - 2.8.3. Search for Suppliers and Request for Quotations
  - 2.8.4. Contract Allocation
  - 2.8.5. Contract Administration
  - 2.8.6. Contracts
  - 2.8.7. Types of Contracts
  - 2.8.8. Contract Negotiation
- 2.9.
  - 2.9.1. Process groups
  - 2.9.2. Project Execution
  - 2.9.3. Project Monitoring and Control
  - 2.9.4. Project Closure
- 2.10. Professional Responsibility
  - 2.10.1. Professional Responsibility
  - 2.10.2. Characteristics of Social and Professional Responsibility
  - 2.10.3. Project Leader Code of Ethics
  - 2.10.4. Liability vs. PMP®
  - 2.10.5. Examples of Liability

## 2.10.6. Benefits of Professionalization

**Module 3. Web-Client Computing**

- 3.1. Introduction to HTML
  - 3.1.1. Structure of the Document
  - 3.1.2. Color
  - 3.1.3. Text:
  - 3.1.4. Hypertext Links
  - 3.1.5. Images
  - 3.1.6. Lists
  - 3.1.7. Tables
  - 3.1.8. *Frames*
  - 3.1.9. Forms.
  - 3.1.10. Specific Elements for Mobile Technologies
  - 3.1.11. Obsolete Elements
- 3.2. Cascading Style Sheets (CSS)
  - 3.2.1. Elements and Structure of a Cascading Style Sheet
    - 3.2.1.1. Creation of Style Sheets
    - 3.2.1.2. Application of Styles Selectors
    - 3.2.1.3. Style Inheritance and Cascading
    - 3.2.1.4. Page Formatting Using Styles
    - 3.2.1.5. Page Structuring Using Styles. The Box Model
  - 3.2.2. Style Design for different Devices
  - 3.2.3. Types of Style Sheets: Static and Dynamic Pseudoclasses
  - 3.2.4. Best Practices in the Use of Style Sheets
- 3.3. Introduction and History of JavaScript
  - 3.3.1. Introduction
  - 3.3.2. History of JavaScript
  - 3.3.3. Development Environment to be Used
- 3.4. Basic Notions of Web Programming
  - 3.4.1. Basic JavaScript Syntax
  - 3.4.2. Primitive Data Types and Operators
  - 3.4.3. Variables and Areas
  - 3.4.4. Text Strings and *Template Literals*
  - 3.4.5. Numbers and Booleans
  - 3.4.6. Comparisons
- 3.5. Complex JavaScript Structures
  - 3.5.1. Vectors or *Arrays* and Objects
  - 3.5.2. Sets
  - 3.5.3. Maps
  - 3.5.4. Disjunctive
  - 3.5.5. Loops
- 3.6. Functions and Objects
  - 3.6.1. Function Definition and Invocation
  - 3.6.2. Arguments
  - 3.6.3. Arrow Functions
  - 3.6.4. *Callback* Functions
  - 3.6.5. Higher Order Functions
  - 3.6.6. Literal Objects
  - 3.6.7. The *This* Object
  - 3.6.8. Objects as Namespaces: the *Maths* and *Date* Objects
- 3.7. The Document Object Model (DOM)
  - 3.7.1. What is DOM?
  - 3.7.2. A Bit of History
  - 3.7.3. Navigation and Element Retrieval
  - 3.7.4. A Virtual DOM with JSDOM
  - 3.7.5. *Query selectors*
  - 3.7.6. Navigation using Properties
  - 3.7.7. Assigning Attributes to Elements
  - 3.7.8. Creation and Modification of Nodes
  - 3.7.9. Updated Styling of the DOM Elements
- 3.8. Modern Web Development
  - 3.8.1. Event-Driven Flow and *Listeners*
  - 3.8.2. Modern Web *Toolkits* and Alignment Systems
  - 3.8.3. Strict JavaScript Mode
  - 3.8.4. More about Functions
  - 3.8.5. Asynchronous Promises and Functions
  - 3.8.6. *Closures*

- 3.8.7. Functional Programming
- 3.8.8. POO in JavaScript
- 3.9. Web Usability
  - 3.9.1. Introduction to Usability
  - 3.9.2. Definition of Usability
  - 3.9.3. Importance of User-Centered Web Design
  - 3.9.4. Differences Between Accessibility and Usability
  - 3.9.5. Advantages and Problems in Combining Accessibility and Usability
  - 3.9.6. Advantages and Difficulties in the Implementation of Usable Websites
  - 3.9.7. Usability Methods
  - 3.9.8. User Requirements Analysis
  - 3.9.9. Conceptual Design Principles. User-Oriented Prototyping
  - 3.9.10. Guidelines for the Creation of Usable Web Sites
    - 3.9.10.1. Usability Guidelines of Jakob Nielsen
    - 3.9.10.2. Usability Guidelines of Bruce Tognazzini
  - 3.9.11. Usability Evaluation
- 3.10. Web Accessibility
  - 3.10.1. Introduction
  - 3.10.2. Definition of Web-Accessibility
  - 3.10.3. Types of Disabilities
    - 3.10.3.1. Temporary or Permanent Disabilities
    - 3.10.3.2. Visual Impairment
    - 3.10.3.3. Hearing Impairment
    - 3.10.3.4. Motor Impairment
    - 3.10.3.5. Neurological or Cognitive Disabilities
    - 3.10.3.6. Difficulties Arising from Aging
    - 3.10.3.7. Limitations Arising from the Environment
    - 3.10.3.8. Barriers Preventing Access to the Web
  - 3.10.4. Technical Aids and Support Products to Overcome Barriers
    - 3.10.4.1. Aids for the Blind
    - 3.10.4.2. Aids for Persons with Low Vision
    - 3.10.4.3. Aids for People with Color Blindness
    - 3.10.4.4. Aids for the Hearing Impaired
    - 3.10.4.5. Aids for the Motor Impaired
    - 3.10.4.6. Aids for the and Neurological Impaired
  - 3.10.5. Advantages and Difficulties in the Implementation of Web Accessibility
  - 3.10.6. Web Accessibility Regulations and Standards
  - 3.10.7. Web Accessibility Regulatory Bodies
  - 3.10.8. Comparison of Standards and Regulations
  - 3.10.9. Guidelines for Compliance with Regulations and Standards
    - 3.10.9.1. Description of the Main Guidelines (Images, links, videos, etc.)
    - 3.10.9.2. Guidelines for Accessible Navigation
      - 3.10.9.2.1. Perceptibility
      - 3.10.9.2.2. Operability
      - 3.10.9.2.3. Comprehensibility
      - 3.10.9.2.4. Robustness
  - 3.10.10. Description of the Web Accessibility Compliance Process
  - 3.10.11. Compliance Levels
  - 3.10.12. Compliance Criteria
  - 3.10.13. Compliance Requirements

## 3.10.14. Web Site Accessibility Evaluation Methodology

**Module 4. Web Server Computing**

- 4.1. Introduction to Server-Side Programming: PHP
  - 4.1.1. Server-Side Programming Basics
  - 4.1.2. Basic PHP Syntax
  - 4.1.3. HTML Content Generation with PHP
  - 4.1.4. Development and Testing Environments: XAMPP
- 4.2. Advanced PHP
  - 4.2.1. Control Structures with PHP
  - 4.2.2. PHP Functions
  - 4.2.3. Array Handling in PHP
  - 4.2.4. String Handling with PHP
  - 4.2.5. Object Orientation in PHP
- 4.3. Data Models
  - 4.3.1. Concept of Data. Life Cycle of Data
  - 4.3.2. Types of Data
    - 4.3.2.1. Basic
    - 4.3.2.2. Records
    - 4.3.2.3. Dynamics
- 4.4. Relational Model
  - 4.4.1. Description
  - 4.4.2. Entities and Types of Entities
  - 4.4.3. Data Elements. Attributes
  - 4.4.4. Relationships: Types, Subtypes, Cardinality
  - 4.4.5. Keys Types of Keys
  - 4.4.6. Normalization. Normal Shapes
- 4.5. Construction of the Logical Data Model
  - 4.5.1. Specification of Tables
  - 4.5.2. Definition of Columns
  - 4.5.3. Key Specification
  - 4.5.4. Conversion to Normal Shapes. Dependency
- 4.6. The Physical Data Model. Data Files
  - 4.6.1. Description of Data Files
  - 4.6.2. Types of Files
  - 4.6.3. Access Modes
  - 4.6.4. File Organization
- 4.7. Database Access from PHP
  - 4.3.1. Introduction to MariaDB
  - 4.3.2. Working with a MariaDB Database: the SQL Language
  - 4.3.3. Accessing the MariaDB Database from PHP
  - 4.3.4. Introduction to MySQL
  - 4.3.5. Working with a MySQL Database: The SQL Language
  - 4.3.6. Accessing MySQL Database from PHP
- 4.8. Client Interaction from PHP
  - 4.8.1. PHP Forms
  - 4.8.2. Cookies
  - 4.8.3. Session Management
- 4.9. Web Application Architecture
  - 4.9.1. The Controller View Model Pattern
  - 4.9.2. Controller
  - 4.9.3. Models
  - 4.9.4. View
- 4.10. Introduction to Web Services
  - 4.10.1. Introduction to XML
  - 4.10.2. Service-Oriented Architecture (SOA): Web services
  - 4.10.3. Creation of SOAP and REST Web Services
  - 4.10.4. The SOAP Protocol
  - 4.10.5. The REST Protocol



# 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.





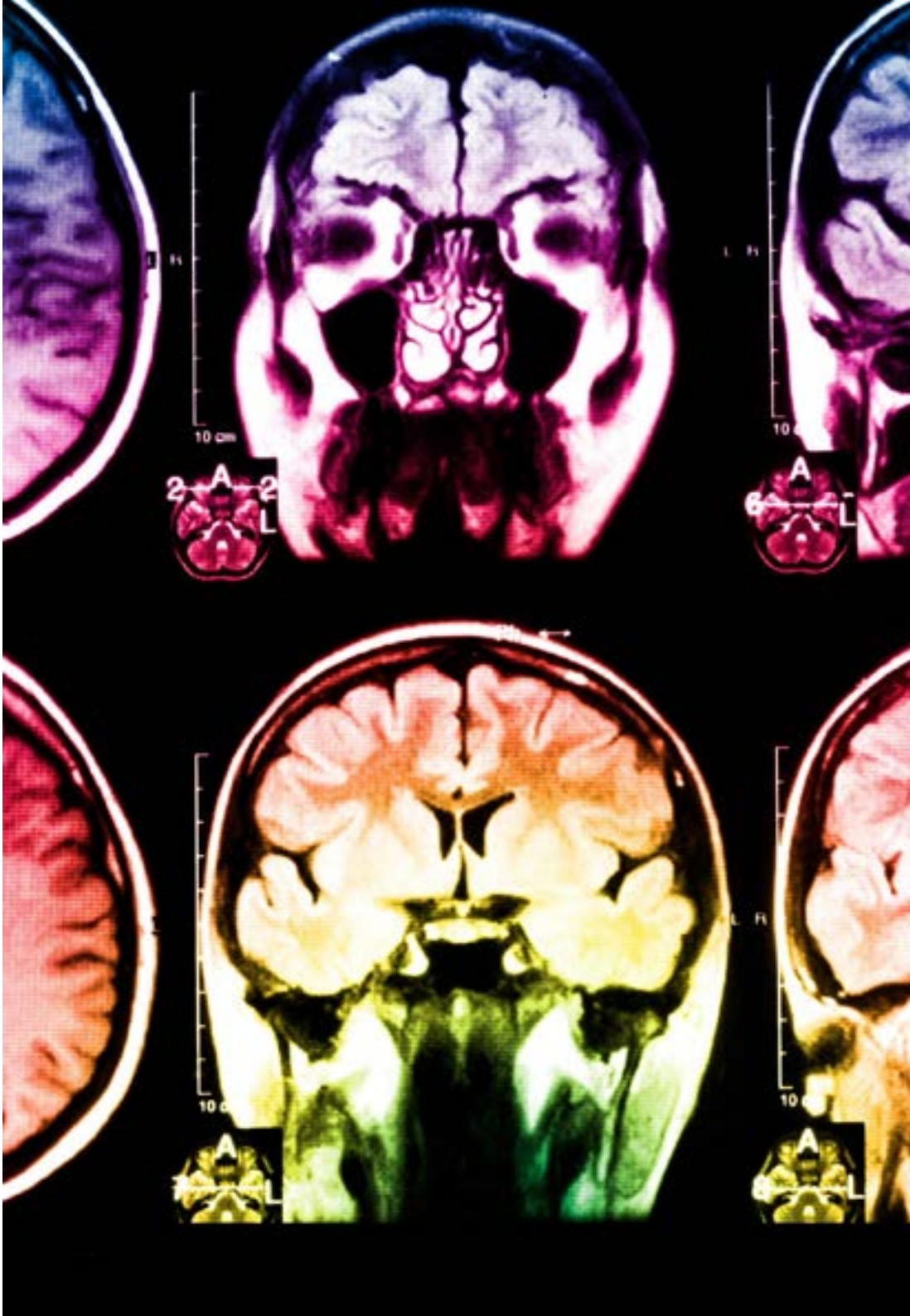
In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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.

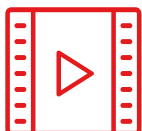
*Relearning will allow you to learn with less effort and better performance, involving you more in your learning, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

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 adapted in 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.



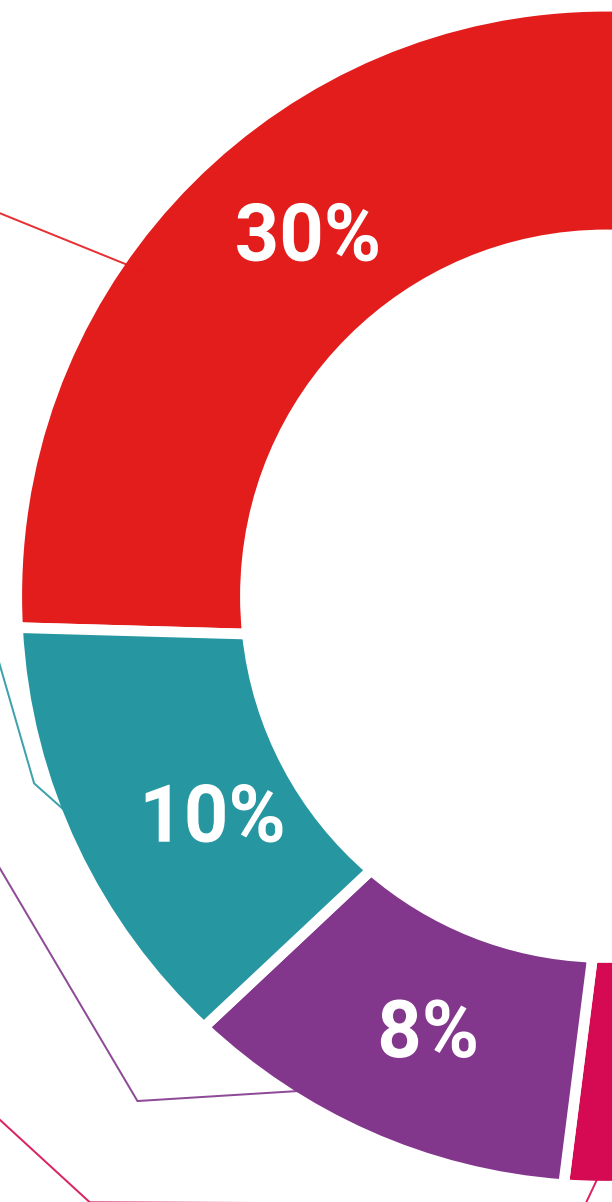
#### Practising Skills and Abilities

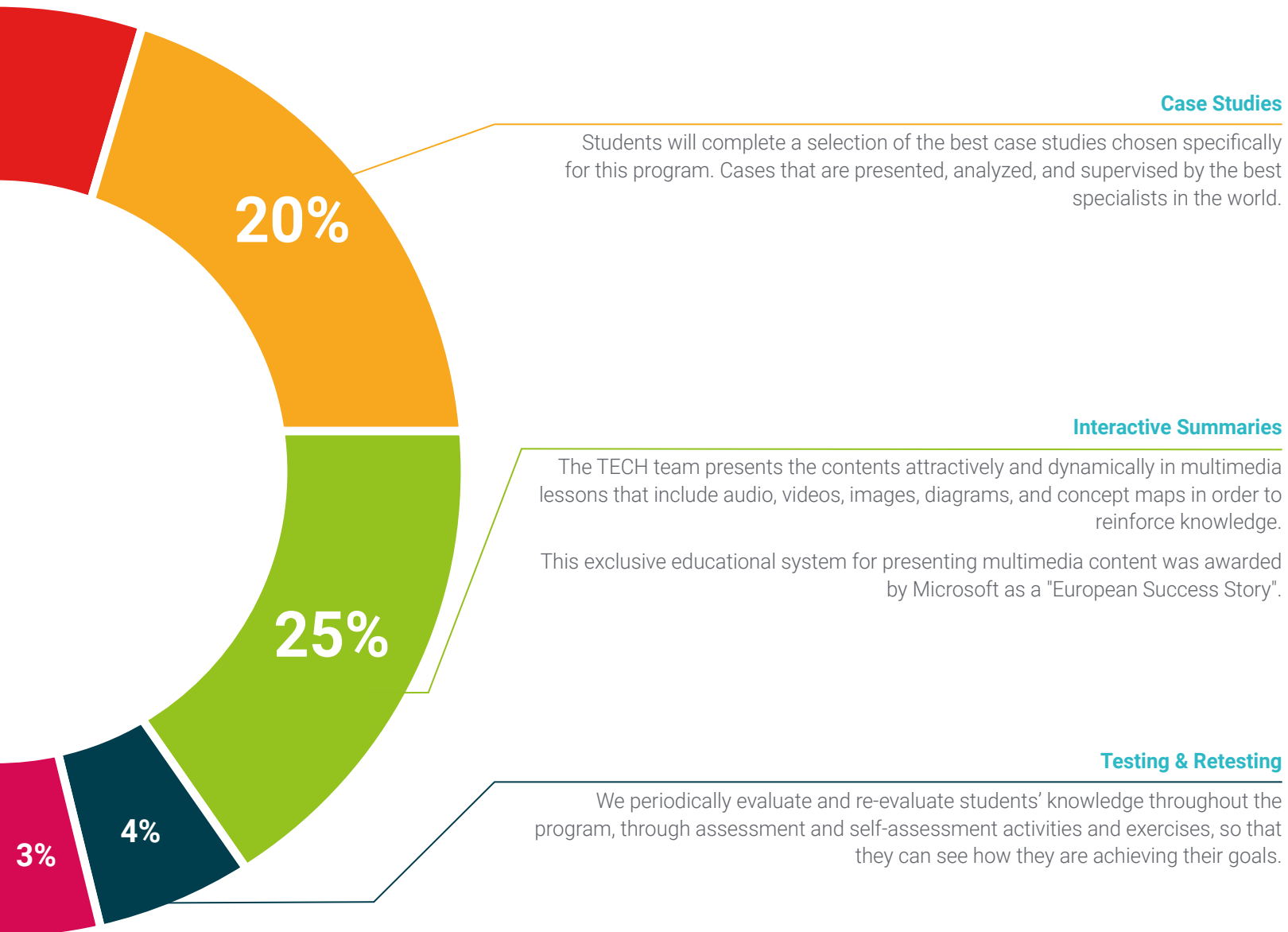
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



#### 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 Diploma in Software Development for Web Applications 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 Software Development for 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 Diploma**, issued by **TECH Technological University** via tracked delivery.

The diploma 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 Software Development for Web Applications**

Official N° of Hours: **600**







## Postgraduate Diploma Software Development for Web Applications

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Diploma Software Development for Web Applications