Master's Degree
Web Services and Applications Development

tech global university

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Master's Degree
Web Services and
Applications Development

- » Modality: **online**
- » Duration: **12 months**
- » Certificate: **TECH Global University**
- » Credits: **60 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: www.techtitute.com/us/information-technology/master-degree/master-web-services-applications-development

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Introduction

The great momentum of *e-commerce*, from digital communication to business management and entertainment has generated a great demand for web services and applications. Therefore, technology industry has become indispensable, demanding IT profiles that are increasingly qualified and up to date with latest trends. An unstoppable reality that has motivated TECH to create this 100% online Certificate that offers students advanced and intensive learning on planning, management, security, observability and deployment in this field. For this, the graduate will have a syllabus, available at any time of the day and prepared by experts in Software, Systems and Computing, versed in this field and with a wide professional trajectory in the sector.

In just 12 months you will be able to develop a complete web application from start to finish. Enroll now"

Technology advances such as 5G, Internet of Things, Artificial Intelligence and e-commerce boom have boosted the creation of innovative web applications and services. In this scenario, in addition to the development itself, personalized attention to user and security guarantees in connectivity have acquired great relevance.

This is a reality that has motivated many IT professionals to improve their competencies and skills in these areas in order to make their way into large companies within industry. To facilitate this professional progression, TECH has created this 12-month Master's Degree in Web Services and Applications Development.

It is a program that covers all essential elements for planning, development and operation of this type of solutions. In addition, the Syllabus incorporates latest trends around Cloud deployment options and offers a 360-degree view of Web Architectures. All of this is complemented by numerous multimedia didactic materials, accessible at any time of the day, from an electronic device with an Internet connection. In addition, thanks to the *Relearning* method, based on reiteration of essential content, the graduate will achieve much more effective learning without need to invest long hours of study and memorization.

An exceptional opportunity to increase the range of activities in a growing sector through a 100% online and flexible academic proposal. With this methodology, the professional will have greater freedom to self-manage their time to access the program and reconcile their personal and daily work activities.

This **Master's Degree in Web Services and Applications Development** 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 with which they are created, provide scientific and practical information on 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

Thanks to this Certificate you will be updated on recent trends in codeless development and advances in Generative AI"

Acquire advanced learning around management, security and observability in Web Services"

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

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive education programmed to prepare for real situations.

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

The Relearning system will allow you to reduce long hours of study and memorization.

Delve into latest advances in Cloud deployment options from the best professionals in the field.
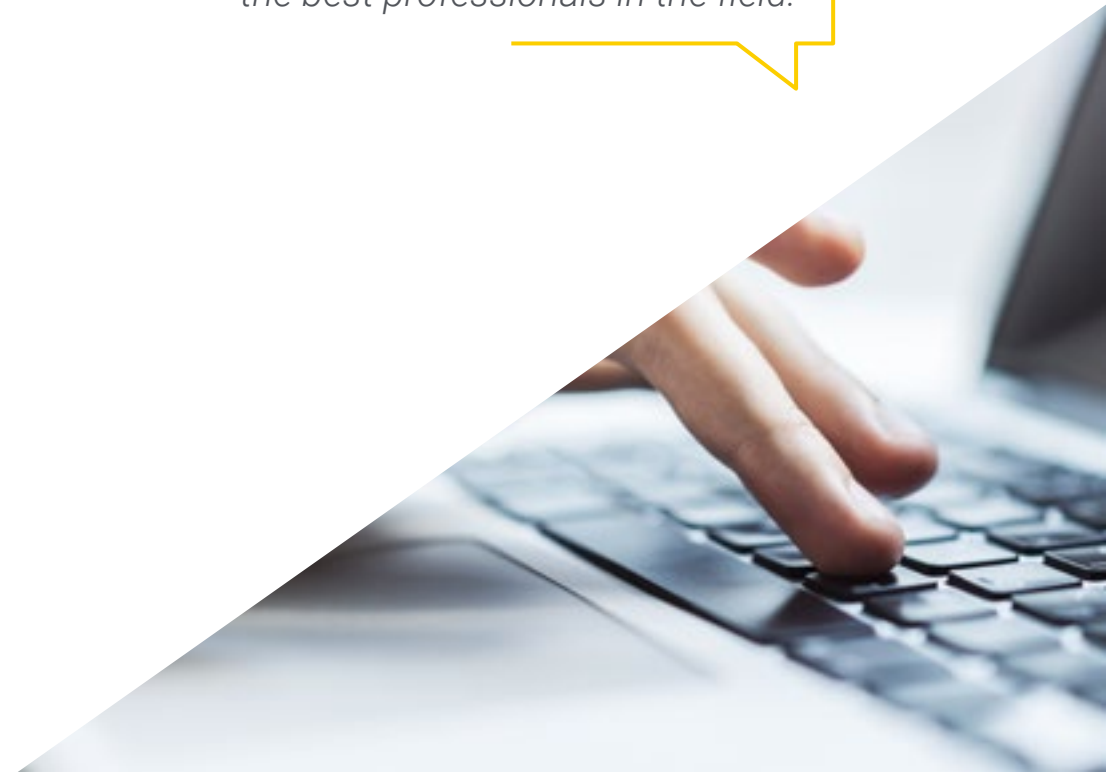
02
Objectives

This University Certificate provides the computer scientist with a complete learning process for Development of Web Applications and Services, in accordance with latest trends. This way, at the end of the 1,500 teaching hours, the graduate will have increased their knowledge of techniques and tools used. In addition, you will master safety and maintenance regulatory issues. This way, you will be able to take a firm step in your professional your professional career in this sector.

"With this Certificate you will be updated on advanced use cases, such as search engines and architectures for extracting, transforming and loading large amounts of data in real time"

General Objectives

- To generate specialized knowledge on advanced web architecture

- To address *Back-end* development of web application, reviewing available technologies, integration mechanisms such as APIs, message queues and events, and deployment and optimization processes.

- To develop necessary steps for *Front-end* creation of web application, considering programming aspects as well as accessibility requirements, multi-language and multi-platform support.

- To create personalized experiences, monitor and monetize web usage.

- To consolidate good application design and development practices with project management that favors continuous iteration, integration and deployment.

- To analyze in depth aspects related to web application security, with special focus on the most common attacks and corresponding prevention, detection and mitigation mechanisms.

- To review safety recommendations and regulations

- To address security as one of the pillars of advanced web architectures.

- To establish cloud computing as a booming alternative for development and deployment of web applications

- To review key features and vendors, planning migration scenarios and incorporating new roles and processes in project management
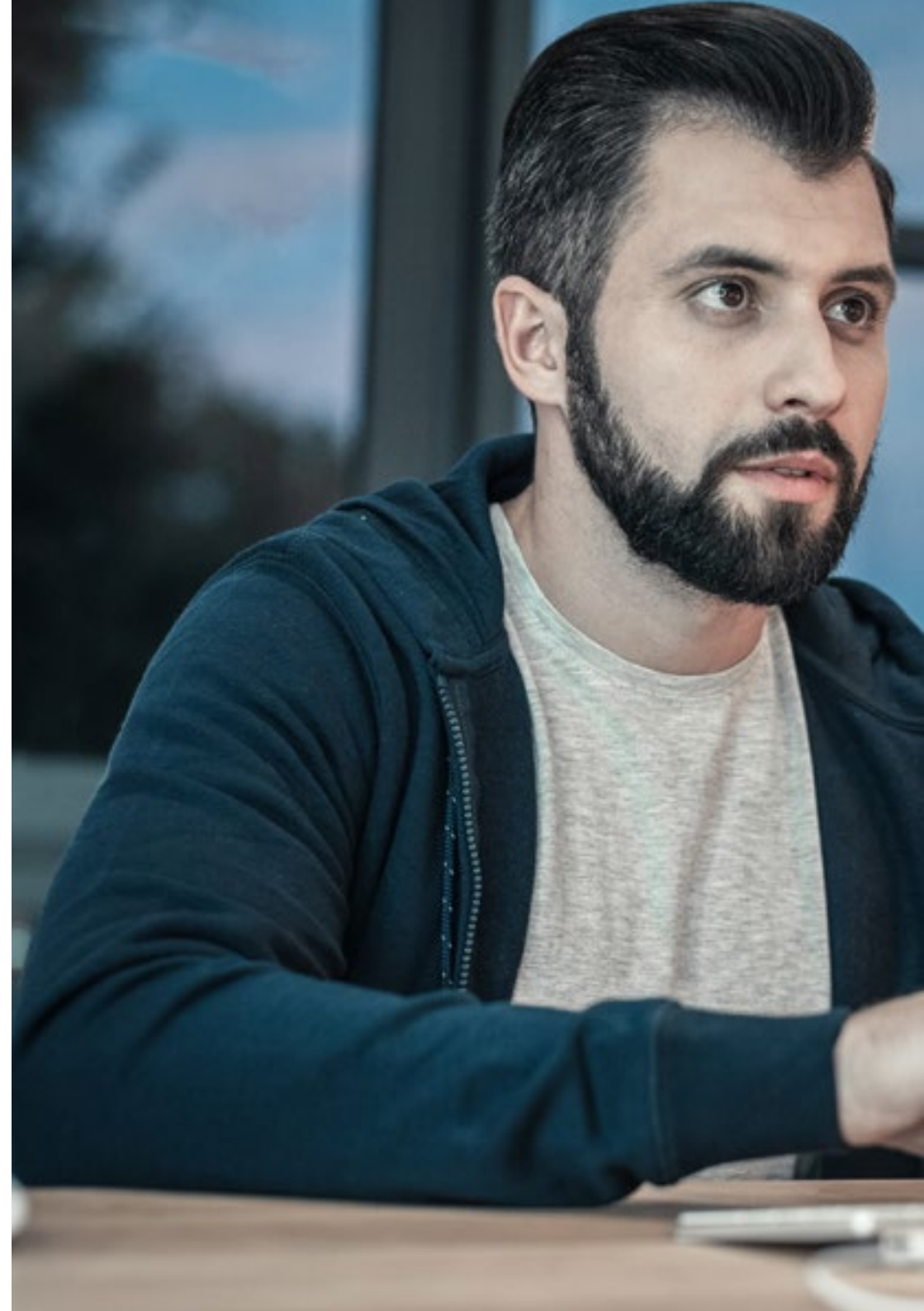
Specific Objectives

Module 1. ADVANCED Web Architecture

- To determine components and layers of web architectures
- To identify main web communication protocols
- To examine different types and patterns of web architectures
- To deepen in web architecture design following best practices
- To assimilate processes of continuous improvement and evolution of web architectures
- To analyze real web services and applications architectures to serve as a reference

Module 2. Front-End Development of Web Application

- To examine *Front-end* development technologies and patterns
- To establish how client-server communication works
- To determine options for managing web application status
- To analyze user interface development process
- To design advanced user experience with multi-platform support
- To apply accessibility criteria and multi-language support
- To identify and solve *Front-end* performance problems

## Module 3. Back-end Development of Application

- To examine *back-end* development technologies and patterns
- To develop application interfaces (APIs) of various types
- To analyze mechanisms integration, such as message queues and events
- To deepen in containerized application development
- To set up steps to deploy and run applications on *back-end*
- To identify and solve performance problems in *back-end*
- To examine latest trends in application development

Module 4. Design and data persistence implementation

- To examine various options for persisting web application data
- To analyze relational and non-relational database usage
- To develop other types of databases
- To generate specialized knowledge in use cases and tools of file storage
- To establish motivations and solutions for search engines
- To develop advanced architectures for processing large amounts of data

Module 5. Web Application User Management

- To examine registration, authentication and authorization processes for web users
- To set up user role and credential management
- To identify mechanisms to manage user's session
- To develop systems available for communication with users
- To deepen in regulation and good practices of data protection
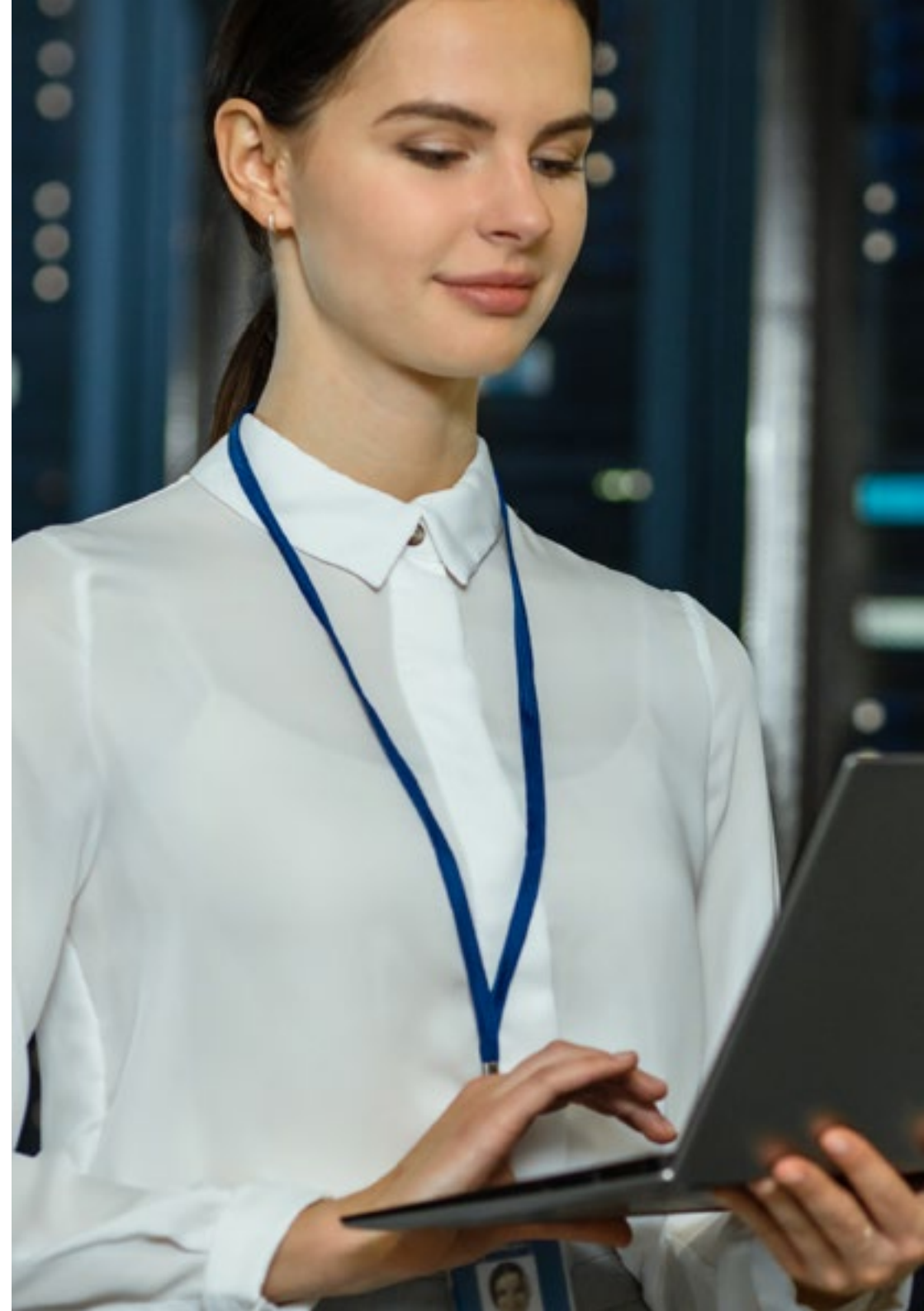
Module 6. Web Projects Management and Organization

- To analyze web application development process and its methodologies
- To examine DevOps working model and its implications
- To develop mechanisms and solutions for code version control
- To set up integration process and continuous deployment of applications
- To establish quality control and maintenance tasks for application
- To deepen in management of costs and web project *releases*

Module 7. Web Application Security

- To review data encryption mechanisms and web certificates
- To identify, prevent and mitigate main types of web attacks
- To determine *bot* types and existing protection mechanisms
- To examine main web security tools and services
- To establish security recommendations and regulations in web industry

Module 8. Web Application Observability and Resilience

- To incorporate aspects of resilience and observability in development
- To manage observability components: *logs,* traces and metrics
- To determine how to design fault-tolerant architectures
- To discover mechanisms to ensure performance and high availability
- To learn *Chaos Engineering's* strategies for educate and prepare teams

Module 9. Web Applications and Services in the Cloud

- To analyze use cases and options for cloud computing
- To develop *serverless* computing model common in this type of deployments
- To examine and compare leading cloud service providers
- To determine strategies and recommendations for cloud migration
- To identify and apply cost optimization mechanisms in the cloud
- To incorporate cloud work in the team and company

Module 10. Advanced Web Application Building

- To practice the complete process of developing a web application
- To analyze requirements and make technological and management decisions
- To set up a development platform that can also be used for future projects
- To discover, through trial and error, real world challenges of working with web applications
- To validate resilience advantages and observability oriented design benefits
- To monitor and maintain a real application
- To have a reference project for future projects

Increase your ability to work in teams within technology sector and lead API development projects"

03
Skills

This academic proposal has been designed to offer from start to finish all competencies and skills necessary for students to be able to get involved in or lead projects in the technology sector. For this, the graduate has case studies and an exhaustive syllabus that presents a theoretical-practical approach and very useful for their daily performance as a *Full Stack* developer, *Back-end developer, Front-end* developer or web project manager, among others.

Empower your skills to generate personalized user experiences in advanced web applications"

General Skills

- Develop necessary skills to design and evolve advanced web architectures
- Design and implement backup and recovery policies
- Create a solid framework for development, deployment and maintenance of web applications
- Create, step by step, a modern web application in which design, development, management and other best practices will be applied
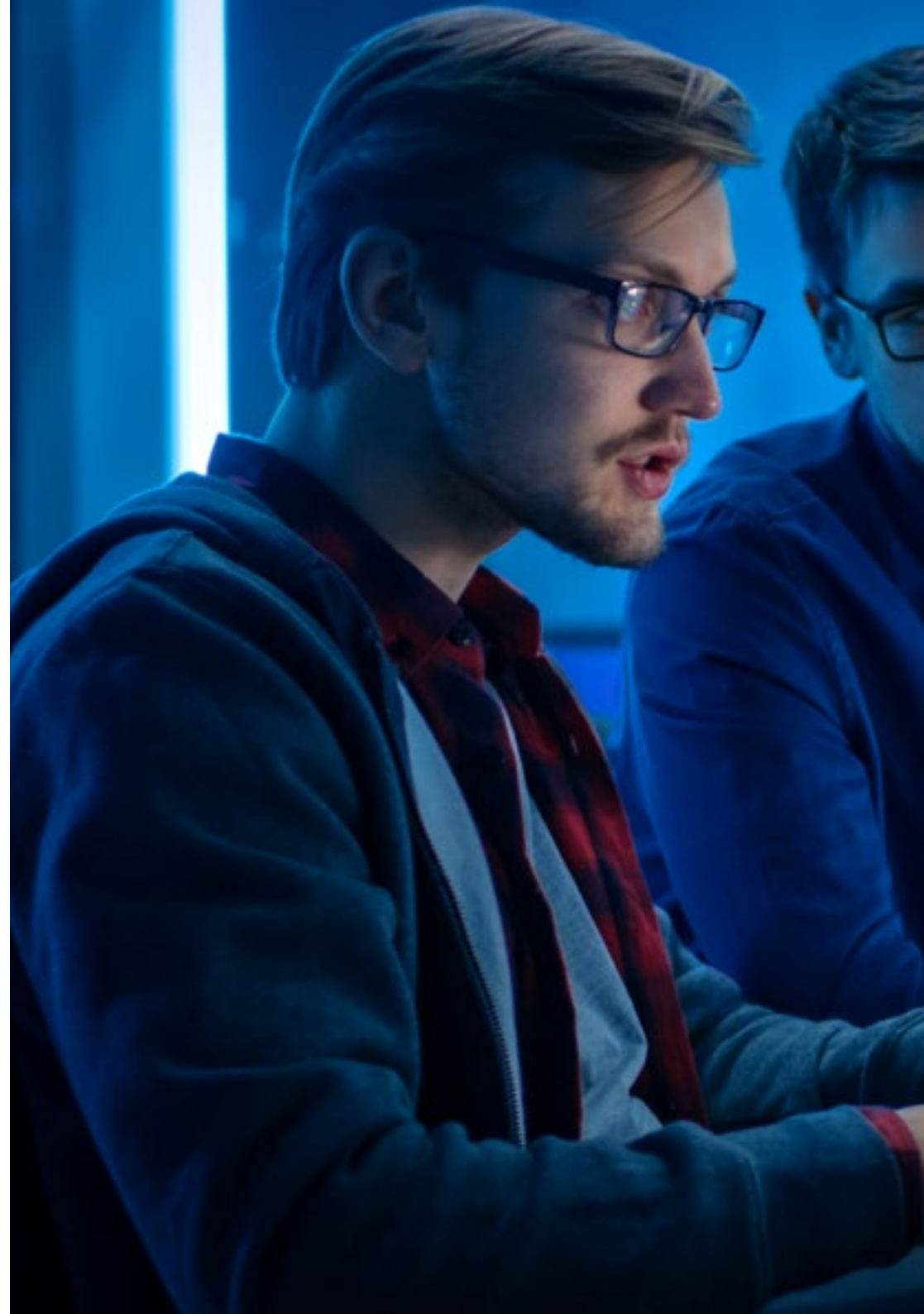
Specific Skills

- Apply caching mechanisms to improve performance
- Analyze different approaches to user data isolation
- Manage application infrastructure using code
- Analyze security policies and practices applicable to the equipment and the company
- Plan and respond to disaster scenarios
- Evaluate cloud services for free

" With this Master's Degree you will enhance all your skills to plan, develop, deploy, manage and maintain Advanced Web Applications and Web Services"

Course Management

Students who take this Master's Degree will have at their disposal a syllabus prepared by an excellent teaching team with extensive experience in technology sector, occupying positions of maximum responsibility in various companies. Their background and knowledge of latest trends for Web Services and Applications Development are a guarantee for those graduates who want a complete learning experience from the hands of the best specialists.

An excellent team of specialists in Software, Systems and Computing will answer any questions you may have about this program's syllabus"

Management

Dr. Pantaleón García del Valle, Eduardo

- Solutions Architect in 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 as part of the AWS Customer Proficiency Plan
- Member of the Alumni Mentoring Program of Universidad Carlos III de Madrid, for the professional counseling of students and recent graduates
- Graduated in Telecommunication Engineering from Universidad Carlos III of Madrid
- D. in Software, Systems and Computing from the Universidad Politécnica of Madrid
- Master's Degree in and Computer Systems by the National University of Distance Education.- UNED
- Executive Data Science Specialization by the Universidad Johns Hopkins

Professors

Mr. López Mendoza, Marvin Roberto
- Computing Systems Engineer
- Senior Agile Coach, Manager Projects and Agile Chapter Lead at Cognizant
- IT Senior Consultor, Scrum Master, Tech Evangelist at Minsait
- QA Lead, Senior Team Lead y Scrum Master at Control Risks
- Senior QA Engineer at Smartmatic
- IT Project Manager at Blom Geospatial Systems
- Computer Systems Engineer from the Technological University of Panama
- IEBS Master's Degree in Agile Product, Business and Technology Management
- Master's Degree in Investment Project Formulation and Evaluation from the Universidad Latina de Panamá

Ms. Sánchez Romero, Isabel
- IT Engineer
- Responsible for offers in the IT area to different public and private organizations
- Online teacher in various vocational education programs
- Technical Engineering in Computer Management by the Escuela Universitaria Politécnica de Informática of the University of Extremadura

Mr. Orbezo Gutiérrez, Alberto
- Senior Software Developers at BABEL
- Programmer and analyst at Álamo Consulting
- IT Consultant

Ms. Cupas Pitti, Carol Sugeili
- Project Coordinator at Cognizant
- Technology Articles Writer at OpenWebinars
- Data Analyst at NVIA
- eDiscovery Project Manager in Control Risks
- Associate Director of Operations in Control Risks
- QA Manager in Control Risks
- Business Intelligence Architect in BICSA
- Senior System Analyst at HSBC
- Analyst Support at Ultimus
- Computer System Engineer in Panamerican Semiconductors Inc
- B.S. in Computer Systems Engineering from the Technological University of Panama
- Postgraduate course in Senior Management at Universidad Latina de Panamá
- Master's Degree in Business Administration with emphasis in Business Management from Universidad Latina de Panamá
- Master's Degree in Big Data and Business Intelligence by Next International Business School

Dr. Utrilla Utrilla, Rubén
- Fullstack Developer at ESSP
- Junior Fullstack Developer at Sinis Technology S.L
- Junior Fullstack Developer at Escuela Politécnica Cantoblanco Campus
- Master in AI and Innovation by Founderz
- Degree in Computer Engineering by Universidad Autónoma de Madrid
- Google Cloud Developer course in Google Academic Program

Dr. López Rodríguez, Armando
- Head of the Technical Advisory Area in the Office of the President of Puertos del Estado
- Head of Strategic Planning Area in Puertos del Estado
- Project Manager at Puertos del Estado
- Head of Resources and Information and Communications Technology Area at Puertos del Estado
- Head of the Development Area in Puertos del Estado
- Head of Corporate Relations Department at Puertos del Estado
- Head of Strategic Planning Area in Puertos del Estado
- Associate Professor of the School of Industrial Organization
- AENOR Associate Professor
- Associate Professor at UBT Lab
- Telecommunications Engineer from Universidad Politécnica de Madrid
- Degree in History from the Universidad Nacional de Educación a Distancia (UNED)
- D. in History from the Universidad Nacional de Educación a Distancia (UNED)
- Master's Degree in Advanced Methods and Techniques of Historical, Artistic and Geographical Research by the Universidad Nacional de Educación a Distancia (UNED)
- Management Development Program (PDD) by the IESE Business School of the University of Navarra

Dr. Seijo Serrao, Pablo
- Storage technician for a consultancy providing services to BBVA
- Computer Systems Technician
- Senior Computer Systems Administration Technician

Dr. Ruiz Espinoza, Óscar Alexis

- Cybersecurity Cloud Architect at Inside Security
- IT Security Specialist at WOM
- Incident manager for Telefónica's Level 2 applications at Intelidata
- IT Infrastructure Administrator and Incident Manager at Soluciones Orión
- Incident manager of web applications, cellular and fixed network at Movilnet
- Mobile First Line Support Incident Manager at Cotrónica C.A.
- Computer Engineer at the Alejandro de Humboldt University of Venezuela
- Postgraduate Certificate in Cybersecurity at Universidad de Santiago de Chile.

Make the most of this opportunity to learn about the latest advances in this subject to apply it to your daily practice"

Structure and Content

This academic institution provides students with a wide variety of teaching resources such as detailed videos, video summaries of each topic, specialized readings and case studies. Through these didactic tools, the computer scientist will deepen in a much more enjoyable way in Web Services and Applications Development, allowing students to obtain a comprehensive learning that will lead them to increase their field of action in this area and distinguish themselves from the rest of competitors.

You have at your disposal a wide range of learning resources, accessible 24 hours a day, 7 days a week"

Module 1. ADVANCED Web Architecture

1.1. ADVANCED Web Architecture
    1.1.1. Service-oriented architectures and web-oriented architectures
    1.1.2. Functional and non-functional aspects of web architectures
    1.1.3. Trends and future of web architectures
1.2. Web Architecture Components
    1.2.1. Client-side components
    1.2.2. Network components
    1.2.3. Servers-side components
1.3. Communication protocols in web architectures
    1.3.1. OSI model and application layer
    1.3.2. Hypertext Transfer Protocol (HTTP/S)
    1.3.3. Other protocols (FTP, SMTP, Websockets)
1.4. Web architecture layers
    1.4.1. Presentation Layer
    1.4.2. Application Layer
    1.4.3. Data layer
1.5. Types of web architectures
    1.5.1. Monolithic architectures
    1.5.2. Microservices Oriented Architectures
    1.5.3. Serverless architectures
1.6. Architecture Patterns from Web Applications
    1.6.1. Model - View - Controller (MVC)
    1.6.2. Model - View presented (MVP)
    1.6.3. Model View- View - Models (MVVM)
1.7. Best practices in web architectures
    1.7.1. Security and testing by design
    1.7.2. Scalability and resilience
    1.7.3. Reusability, extensibility and integrability
1.8. Web architecture design
    1.8.1. Business requirements analysis
    1.8.2. Types of diagrams and tools
    1.8.3. Documentation
1.9. Web Architecture Evolution
    1.9.1. Continuous Improvement Processes
    1.9.2. Third party integration
    1.9.3. Legacy systems support and maintenance
1.10. Reference web architectures
    1.10.1. Static and dynamic websites
    1.10.2. e-Commerce Service
    1.10.3. Streaming platform

Module 2. *Front-End Development* of Web Application

2.1. Web Application Front-end Development Technologies
    2.1.1. HTML5
    2.1.2. CSS
    2.1.3. DOM and JavaScript
2.2. Front-end Development Patterns
    2.2.1. Multiple Page Applications
    2.2.2. Single Page Applications
    2.2.3. Progressive Web Applications
2.3. User Interface (UI) Development in Web Applications
    2.3.1. Frameworks and Front-end development tools
    2.3.2. Separation of responsibilities
    2.3.3. Component-oriented architectures
2.4. Client-Server Communication
    2.4.1. Request flow
    2.4.2. Synchronous communication
    2.4.3. Asynchronous communication
2.5. Status Control in Web Applications
    2.5.1. Global and shared status in Web Applications
    2.5.2. Status management patterns (Redux, MobX, Recoil)
    2.5.3. Use Cases and Recommendations
2.6. User Experience (UX) in Web Applications
    2.6.1. User-Centered Design
    2.6.2. Information Architecture
    2.6.3. Design and prototyping tools

2.7.   Web Accessibility

2.7.1.   Web accessibility standards and regulations (ADA, WCAG, European Accessibility Act)

2.7.2.   Aplicaciones de Internet ricas y accesibles (ARIA)

2.7.3.   Web accessibility tools

2.8.   Multi-platform support

2.8.1.   Mobile first and responsive design

2.8.2.   Native Development Tools

2.8.3.   Hybrid Development Tools

2.9.   Translation and internationalization

2.9.1.   Language management

2.9.2.   Characters Codification

2.9.3.   Regional formats

2.10.   Front-end optimization and performance

2.10.1.   Load optimization techniques

2.10.2.   Lazy and deferred resource loading

2.10.3.   Testing and performance measurement tools

Module 3. Application *Back-end* development

3.1.   Back-end development technologies

3.1.1.   Programming Languages

3.1.2.   Frameworks and libraries

3.1.3.   Dependency management

3.2.   Back-end development Patterns

3.2.1.   SOLID

3.2.2.   Microservices

3.2.3.   API-first

3.3.   REST Application Programming Interfaces (API) Development

3.3.1.   Statefulness y statelessness

3.3.2.   HTTP methods and responses

3.3.3.   Pagination, documentation and versioning

3.4.   Other APIs types

3.4.1.   GraphQL

3.4.2.   Websockets

3.4.3.   gRPC

3.5.   Message Queuing

3.5.1.   Message Queuing

3.5.2.   Patterns and Case Uses

3.5.3.   Available solutions

3.6.   Events-Based Architectures

3.6.1.   Events-Based Architectures

3.6.2.   Event flow layers

3.6.3.   Patterns and Case Uses

3.7.   Application development with containers

3.7.1.   Containers

3.7.2.   Development and deployment with containers

3.7.3.   Tools for Container Management

3.8.   Back-end application deployment and execution

3.8.1.   Packaging

3.8.2.   Web Servers

3.8.3.   Application Servers

3.9.   Front-end optimization and performance

3.9.1.   Scalability and load balancing

3.9.2.   Request limiting and asynchronous processing

3.9.3.   Measurement and performance Test tools

3.10.   Web Application Development Trends

3.10.1.   Generation of applications with low-code and no-code systems

3.10.2.   Generative AI development assistance. Github Copilot

3.10.3.   Gartner Hype Cycle

Module 4. Design and data persistence implementation

Module 5. Web Application User Management

5.7. Personalized user experiences

5.7.1. User segmentation

5.7.2. Recommendation mechanisms

5.7.3. A/B testing

5.8. User monitoring and analytics

5.8.1. Forms of analysis: Behavior, Customer Journey, Funnel Analysis

5.8.2. Web monitoring and analysis tools: Google Analytics and others

5.8.3. Multi-platform tracking: email, mobile devices

5.9. Web application monetization

5.9.1. Search optimization

5.9.2. Digital Marketing Campaigns

5.9.3. E-Commerce and Payment Gateways

5.10. Protection of Personal Data

5.10.1. Data protection area

5.10.2. International data protection regulation

5.10.3. Recommendations and Good Practices

Module 6. Web Projects Management and Organization

6.1. Web application development process

6.1.1. Phases in the Developers Process

6.1.2. Roles and organization in web development projects

6.1.3. Collaborative web development

6.2. Collaborative development methodologies

6.2.1. Agile Manifesto and principles

6.2.2. Comparing Agile Methodologies: Scrum and Kanban

6.2.3. Web project management tools

6.3. Development and operation work model (DevOps)

6.3.1. Responsibilities

6.3.2. Adopting a DevOps working model

6.3.3. Other approaches: DevSecOps, DataOps, MLOps

6.4. Version Control

6.4.1. Benefits of version control

6.4.2. Git version control

6.4.3. Version Control Solutions: Github, Gitlab

6.5. Infrastructure as code (IaaC)

6.5.1. Infrastructure as Code (IaaC)

6.5.2. Infrastructure management patterns

6.5.3. IaaC tools and frameworks: Terraform

6.6. Continuous Integration and Deployment (CI/CD)

6.6.1. Integration Strategies

6.6.2. Deployment and rollback strategies

6.6.3. IC/DC pipeline solutions

6.7. Quality Assurance (QA)

6.7.1. Test planning

6.7.2. Types of Tests

6.7.3. Test automation and execution

6.8. Maintenance and troubleshooting

6.8.1. Service Level Objectives (SLOs) and Service Level Indicators (SLIs)

6.8.2. Incident management and post-incident analysis

6.8.3. Incident management tools

6.9. Web project cost management

6.9.1. Cost factors in web projects: infrastructure, development, operations

6.9.2. Cost Estimation

6.9.3. Costs Control and Optimization

6.10. Web project releases management

6.10.1. Pre-release phases: MVP, Alfa, Beta

6.10.2. Production start-up planning

6.10.3. Generation of New Versions and Compatibilities

Module 7. Web Application Security

7.1.   Secure web architecture design
    7.1.1.   Client security
    7.1.2.   Network Security
    7.1.3.   Server security
7.2.   Encryption
    7.2.1.   Encryption techniques
    7.2.2.   In-transit encryption
    7.2.3.   Encryption at rest
7.3.   Web Certificates
    7.3.1.   Types of web certificates
    7.3.2.   Web certificate generation and storage
    7.3.3.   Certification Authorities
7.4.   Major web attacks
    7.4.1.   Open Worldwide Application Security Project (OWASP) Top 10
    7.4.2.   Injection attacks
    7.4.3.   Denial of Service Attacks
7.5.   Other attack types
    7.5.1.   Software attacks: malware, ransomware
    7.5.2.   Phishing and social engineering attacks: phishing, spoofing
    7.5.3.   Vulnerability exploitation: supply chain, zero-day exploit
7.6.   Bot protection
    7.6.1.   Bot types
    7.6.2.   Detection algorithms
    7.6.3.   Bot challenges: CAPTCHA, image recognition
7.7.   Web security tools and services
    7.7.1.   Prevention
    7.7.2.   Detection
    7.7.3.   Mitigation

7.8.   International Web Industry Safety Regulations and Recommendations
    7.8.1.   ISO 27001
    7.8.2.   Regional regulations: NIS2, NIST
    7.8.3.   Regulations by industry: PCI, HIPAA
7.9.   Security Policies
    7.9.1.   Security roles in development teams
    7.9.2.   Secure development practices
    7.9.3.   Incident response: training and automation
7.10.   Security Tests
    7.10.1.   Vulnerability Analysis
    7.10.2.   Penetration Test
    7.10.3.   Security Audits

Module 8. Web Application Observability and Resilience

8.1.   Site Reliability Engineering (SRE)
    8.1.1.   Development of observable and resilient applications
    8.1.2.   Capacity planning
    8.1.3.   SRE and DevOps collaboration
8.2.   Application logs
    8.2.1.   Log levels and structures
    8.2.2.   Log storage and analysis
    8.2.3.   Frameworks and tools for logs
8.3.   Application traces
    8.3.1.   Application Instrumentation
    8.3.2.   End-to-end traceability: trace ID
    8.3.3.   Frameworks and tools for Trace
8.4.   Metrics monitoring
    8.4.1.   Types of Metrics
    8.4.2.   Metrics storage and analysis
    8.4.3.   *Frameworks* and tools for Metrics

8.5. Incident Response

    8.5.1. Alerts and notifications

    8.5.2. Dashboards and reports

    8.5.3. Process Automation

8.6. Fault-tolerant Application Design

    8.6.1. Failure point detection and health-checks

    8.6.2. Isolation and Redundancy

    8.6.3. Graceful degradation

8.7. High Availability Architectures

    8.7.1. Load balancing

    8.7.2. Horizontal and Vertical Scales

    8.7.3. Upgrades without downtime

8.8. Data backup and recovery

    8.8.1. Backups Policy and Data Retention

    8.8.2. Backup mechanisms

    8.8.3. Recovery options

8.9. Disaster planning and recovery

    8.9.1. Disaster planning: RTO and RPO

    8.9.2. Disaster Recovery Strategies

    8.9.3. Disaster recovery tools

8.10. Chaos Engineering

    8.10.1. Failure tests

    8.10.2. Safety and isolation mechanisms

    8.10.3. Tools and frameworks for failure testing

Module 9. Web Applications and Services in the Cloud

9.1. Cloud Application Architecture

    9.1.1. Cloud Computing

    9.1.2. Cloud Web Applications and Services

    9.1.3. Providers and modalities (IaaS, PaaS, SaaS)

9.2. Cloud web application deployment models

    9.2.1. Public and private clouds

    9.2.2. Multi-cloud and hybrid models

    9.2.3. Edge computing

9.3. Serverless Computing

    9.3.1. Case Uses

    9.3.2. Serverless Application Design

    9.3.3. Functions as a Service (FaaS)

9.4. Amazon Web Services

    9.4.1. Main and Customer Services

    9.4.2. Regional and global availability

    9.4.3. Free offer

9.5. Microsoft Azure

    9.5.1. Main and Customer Services

    9.5.2. Regional and global availability

    9.5.3. Free offer

9.6. Google Cloud Computing

    9.6.1. Main and Customer Services

    9.6.2. Regional and global availability

    9.6.3. Free offer

9.7. Other providers and platforms for cloud web services and applications

    9.7.1. IBM Cloud

    9.7.2. Oracle Cloud

    9.7.3. Web hosting: Heroku, Firebase, Cloudflare

Module 10. Advanced Web Application Building

Set yourself apart from other IT professionals with a Certificate that will make you a great DevOps Engineer"

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.

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%
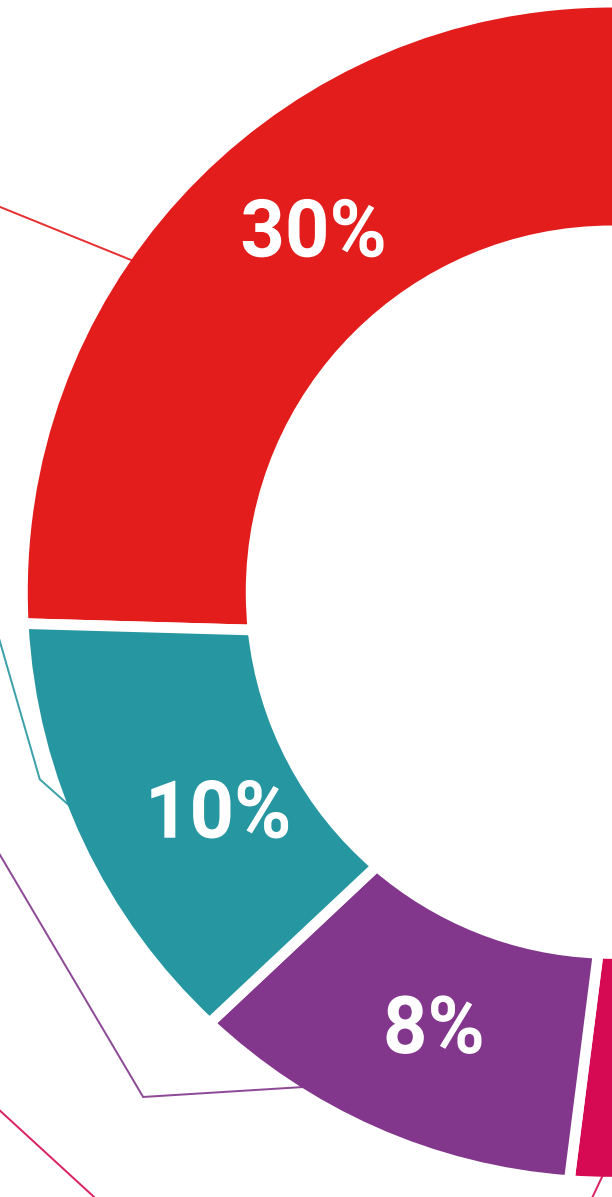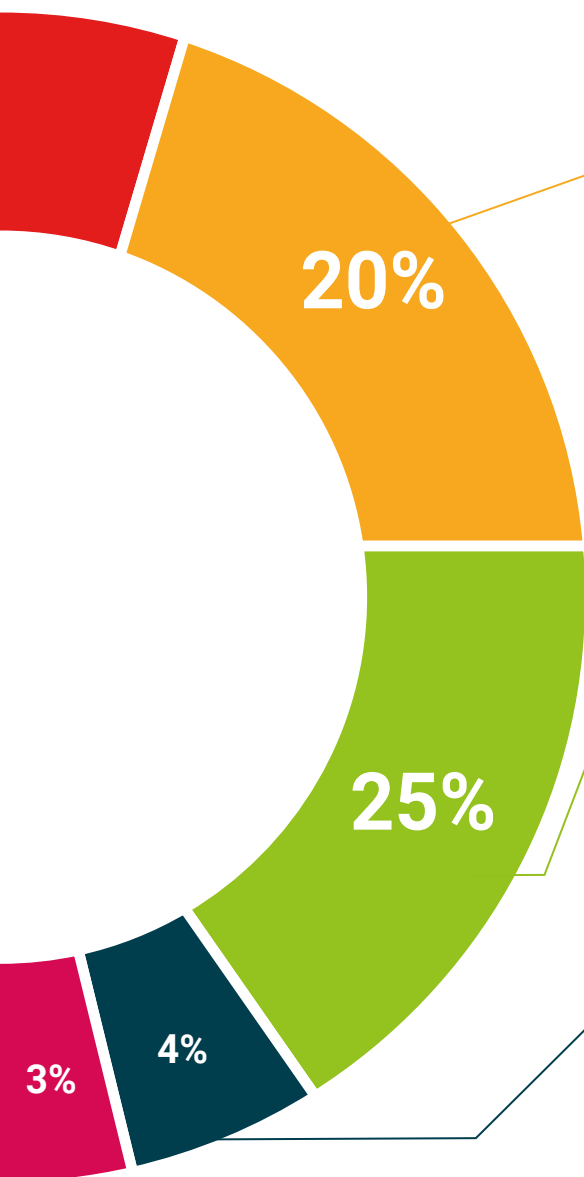
Case Studies

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.

Certificate

The Master's Degree in Web Services and Applications Development guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.

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

This program will allow you to obtain your **Master's Degree diploma in Web Services and Applications Development** endorsed by **TECH Global University**, the world's largest online university.

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 training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.
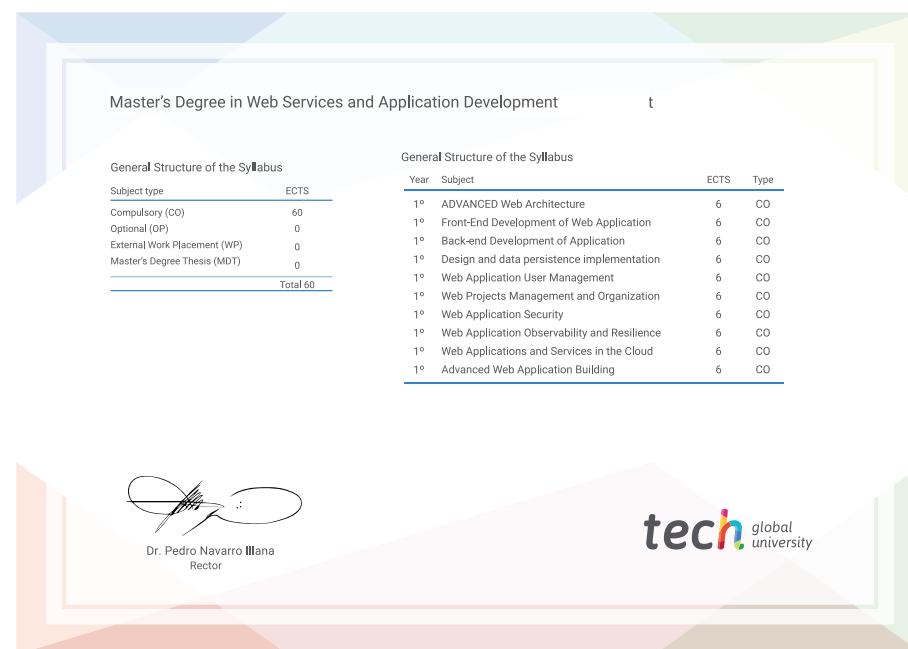
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Master's Degree in Web Services and Applications Development**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**

tech global university

Mr./Ms. _____, with identification document _____ has successfully passed and obtained the title of:

Master's Degree in Web Services and Applications Development

This is a program of 1,500 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

Unique TECH Code: AFWORD23S   techtitute.com/certificates

Master's Degree in Web Services and Application Development   t

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
Total 60	

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	ADVANCED Web Architecture	6	CO
1º	Front-End Development of Web Application	6	CO
1º	Back-end Development of Application	6	CO
1º	Design and data persistence implementation	6	CO
1º	Web Application User Management	6	CO
1º	Web Projects Management and Organization	6	CO
1º	Web Application Security	6	CO
1º	Web Application Observability and Resilience	6	CO
1º	Web Applications and Services in the Cloud	6	CO
1º	Advanced Web Application Building	6	CO

Dr. Pedro Navarro Illana
Rector

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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Master's Degree
Web Services and Applications Development

» Modality: **online**
» Duration: **12 months**
» Certificate: **TECH Global University**
» Credits: **60 ECTS**
» Schedule: **at your own pace**
» Exams: **online**

Master's Degree
Web Services and
Applications Development

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