

Postgraduate Certificate Agile Development Tools from Scratch



Postgraduate Certificate Agile Development Tools from Scratch

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

Website: www.techtitute.com/us/information-technology/postgraduate-certificate/agile-development-tools-scratch

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01

Introduction to the Program

In the last decade, Agile Methodologies have significantly transformed the landscape of software development worldwide. Recent studies indicate that the adoption of agile practices in related teams increased from 37% to 86%. Considering that these approaches have revolutionized the digital area, helping companies to adapt quickly to market changes and optimize their processes, TECH has designed this very complete program that will provide comprehensive and specialized education. Using a 100% online methodology, specialists will carry out a complete immersion in the most widely used methods and tools, from Scrum, Kanban and Lean, to platforms such as JIRA, Trello and Azure DevOps, with the aim of improving productivity and fostering collaboration in multidisciplinary teams.



“

Master the key tools of Agile Development and boost your career in technology. With this Postgraduate Certificate you will learn to manage projects at your own pace and 100% online. Make the most of it now and take your professional profile to the next level!”

Agile Development has transformed the way technology projects are managed, allowing for greater flexibility and efficiency in product delivery. In an environment where speed and adaptability are essential, mastering tools such as Scrum, Kanban, JIRA and Trello has become a competitive advantage. In fact, these methodologies not only optimize workflows, but also foster collaboration between multidisciplinary teams, ensuring results more aligned with market needs.

In response to this demand, TECH has designed the Postgraduate Certificate in Agile Development Tools from Scratch, an advanced program that will provide a comprehensive view of project management in demanding environments. Throughout a dynamic and holistic learning experience, key aspects such as iterative planning, sprint management and development based on continuous delivery will be explored in depth. In addition, the use of specialized software for task optimization will be analyzed, facilitating the implementation of Agile methodologies in any sector.

At the end of the academic itinerary, graduates will have a solid preparation to apply this knowledge in demanding professional environments. In this way, the mastery of agile tools will not only boost efficiency in daily work, but will also open up new job opportunities in innovative companies. As a result, experts will be able to take on strategic roles in the management of technology projects, improving their competitive profile and accessing leadership positions in the field.

TECH will offer this qualification in a 100% online format, adapted to the needs of students who are looking to advance their careers without giving up their daily responsibilities. Thanks to the Relearning methodology, based on the reiteration of key concepts, students' learning will be optimized, allowing for more effective assimilation of the content. Finally, all the material will be available 24 hours a day, allowing access from anywhere and at the most convenient time.

This **Postgraduate Certificate in Agile Development Tools from Scratch** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- ♦ The development of case studies presented by experts in programming
- ♦ 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 the self-assessment process can be carried out to improve learning
- ♦ Special emphasis on innovative methodologies in Agile Development Tools from Scratch
- ♦ 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



Lead Agile projects with the methodologies most in demand on the market. With TECH you will become a specialist in Trello, Azure DevOps and sprint management, without fixed hours and from any electronic device"

“

Make agility your greatest professional advantage. With this Postgraduate Certificate you will master Scrum, Kanban, JIRA and more with an up-to-date syllabus and 100% online. You will take your career to the next level!”

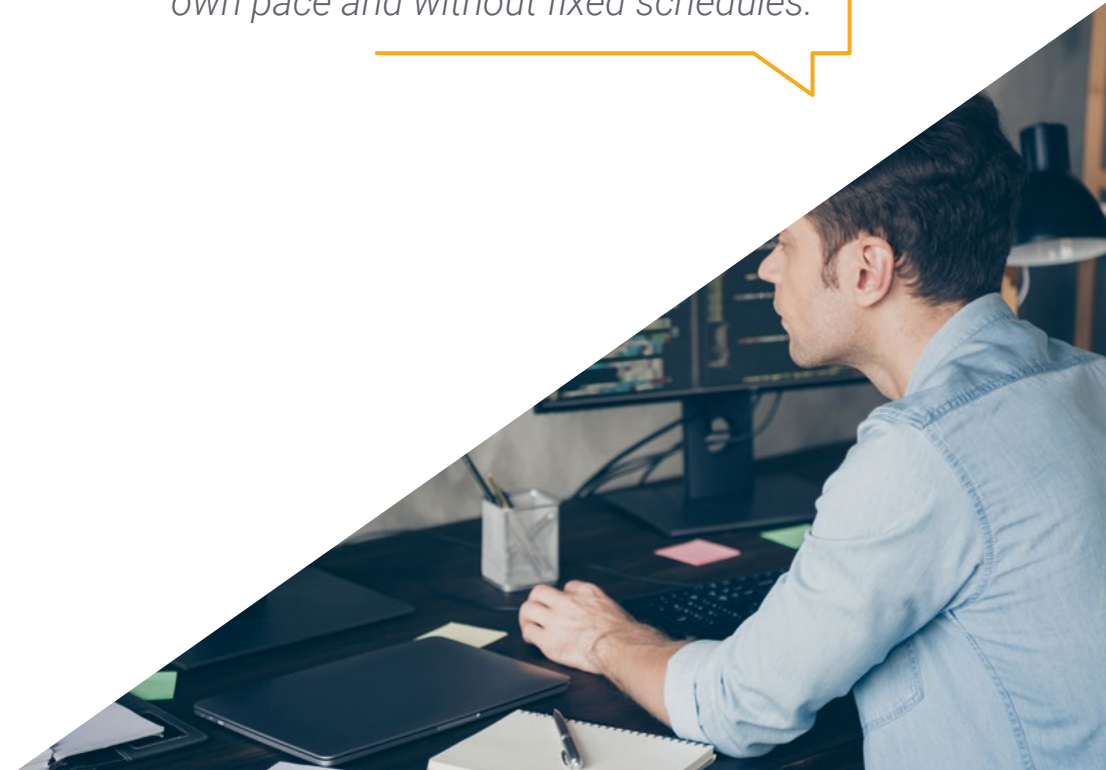
Its teaching staff includes professionals from the field of programming, who bring their work experience to this program, as well as renowned specialists from leading companies and prestigious universities.

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 an immersive learning experience designed to prepare for real-life situations.

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

You will learn from the best and master Agile Development from scratch. With TECH you will have access to a program taught by project management experts. A better future awaits you!

Flexibility, innovation and unlimited learning: with the Relearning methodology you will assimilate the key concepts of Agile Development effectively, at your own pace and without fixed schedules.



02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it relies on an enormous faculty of more than 6,000 professors of the highest international renown.



“

Study at the world's largest online university and guarantee your professional success. The future starts at TECH”

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

Forbes
The best online university in the world

The most complete
syllabus

The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills, and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

TOP
international faculty

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.

World's No.1
The World's largest online university

The most effective methodology

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

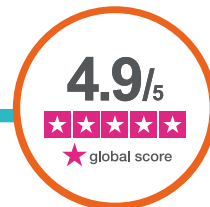
Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



03 Syllabus

Throughout this academic itinerary, professionals will cover everything from the fundamentals of Agile Development to advanced task management with JIRA, Trello and Azure DevOps, essential tools for maximizing productivity. In addition, they will delve into concepts such as iterative planning, continuous improvement, sprint management, backlog prioritization, time or resource estimation and workflow automation. Finally, they will address key aspects such as facilitating Agile meetings, integrating DevOps in demanding environments and measuring performance with key performance indicators (KPIs) to guarantee the efficiency of the process.





“

Through structured content geared towards real application, you will be prepared to lead Agile teams, optimize processes and develop projects more effectively”

Module 1. Development Tools from Scratch: Linux, Version Control, CI/CD, Docker and Agile Methodologies

- 1.1. Linux from Scratch
 - 1.1.1. Linux
 - 1.1.2. Differences between Linux and Other Operating Systems
 - 1.1.3. Popular Linux Distributions for Developers
 - 1.1.4. Configuration and Customization of the Development Environment
 - 1.1.5. Text Editors in Linux
- 1.2. Using the Linux Terminal from Scratch
 - 1.2.1. The Terminal. Uses and Functions
 - 1.2.2. Navigation Commands and File Management in the Terminal
 - 1.2.3. File and Directory Permissions in Linux
 - 1.2.4. Command Redirection and Use of Pipes to Optimize Tasks
- 1.3. Version Control with Git from Scratch
 - 1.3.1. Git: Cloud Providers
 - 1.3.2. Creation and Management of Repositories
 - 1.3.3. Workflow: git init, git add, git commit and git status
 - 1.3.3. Working with Branches: Creation, Merging and Conflict Resolution
- 1.4. Collaborating in Teams with GitHub from Scratch
 - 1.4.1. GitHub: Remote Repositories
 - 1.4.2. Connecting a Local Repository to GitHub: git remote. Initial Configuration
 - 1.4.3. Synchronization with Remote Repositories
 - 1.4.4. Pull Requests and Collaborative Code Review
- 1.5. CI/CD (I) - Continuous Integration (CI) with GitHub Actions from Scratch
 - 1.5.1. Continuous Integration (CI)
 - 1.5.2. Workflow Configuration in GitHub Actions
 - 1.5.3. Automation of Tests and Deployments
- 1.6. Docker from Scratch
 - 1.6.1. Docker and Containers
 - 1.6.2. Docker Installation and Configuration
 - 1.6.3. Docker Container Creation and Management
 - 1.6.4. Dockerfiles: Custom Image Creation



- 1.7. CI/CD (II) - Continuous Delivery (CD) with Docker and GitHub Actions from Scratch
 - 1.7.1. Continuous Delivery (CD)
 - 1.7.2. CD Pipeline Configuration with Docker and GitHub Actions
 - 1.7.3. Automated Deployment with Docker Compose
- 1.8. Agile Methodologies from Scratch (I). Principles and Values
 - 1.8.1. Agile Methodologies: Principles
 - 1.8.2. The Agile Manifesto: Fundamental Values and Principles
 - 1.8.3. Comparison with Traditional Methodologies: Waterfall vs. Agile
- 1.9. Agile Methodologies (II): Scrum from Scratch
 - 1.9.1. Scrum and its Applicability
 - 1.9.2. Key Roles in Scrum: Product Owner, Scrum Master and Development Team
 - 1.9.3. Scrum Artifacts: Product Backlog, Sprint Backlog and Product Increment
 - 1.9.4. Scrum Events: Sprint Planning, Daily Scrum, Sprint Review and Sprint Retrospective
- 1.10. Agile Methodologies (III): Kanban and Metrics from Scratch
 - 1.10.1. Kanban and its Visual Approach
 - 1.10.2. Key Elements in Kanban: Columns, Cards and WIP Limits
 - 1.10.3. Agile Metrics: Burnup, Burndown Charts, Velocity and Lead Time

“

Do you want to become an expert in Agile Development Tools? This program will provide you with practical tools and a flexible approach that will drive you to meet your goals”

04

Teaching Objectives

This Postgraduate Certificate has been designed with the aim of providing professionals with the skills necessary to manage projects in an efficient and flexible way. Through a practical and up-to-date approach, the program will encourage graduates to gain a thorough understanding of the most widely used Agile methodologies and to know how to implement them in different work environments. They will also acquire a complete mastery of key tools such as JIRA, Trello and Azure DevOps, which are essential for the organization and execution of tasks in Agile teams. Finally, they will develop skills to manage sprints, prioritize backlogs, estimate times and optimize workflows.



“

Only TECH will guarantee you a comprehensive, dynamic and efficient preparation that will turn you into a leader in Agile project management. What are you waiting for to belong to the world's largest online university according to Forbes?”



General Objectives

- Understand the principles and fundamentals of agile development in technology projects
- Implement agile methodologies such as Scrum and Kanban for project management
- Use tools such as Jira, Trello or Asana to organize tasks and sprints
- Design collaborative workflows that promote team efficiency
- Establish strategies for prioritizing and assigning tasks according to project objectives
- Facilitate agile meetings such as daily stand-ups, retrospectives and planning sessions to improve performance
- Monitor project progress using metrics and dashboards
- Integrate version control tools such as Git into the agile framework
- Adapt agile methodologies to different types of projects and multidisciplinary teams
- Promote a culture of continuous improvement and feedback in development processes





Specific Objectives

- Operate the Linux operating system at the command line level
- Master the use of Git for version control
- Implement Continuous Integration and Deployment (CI/CD) pipelines
- Create and manage Docker containers



The innovative Relearning system that TECH offers you is designed to facilitate your learning from anywhere in the world. Enroll now and boost your professional future!"

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



“

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

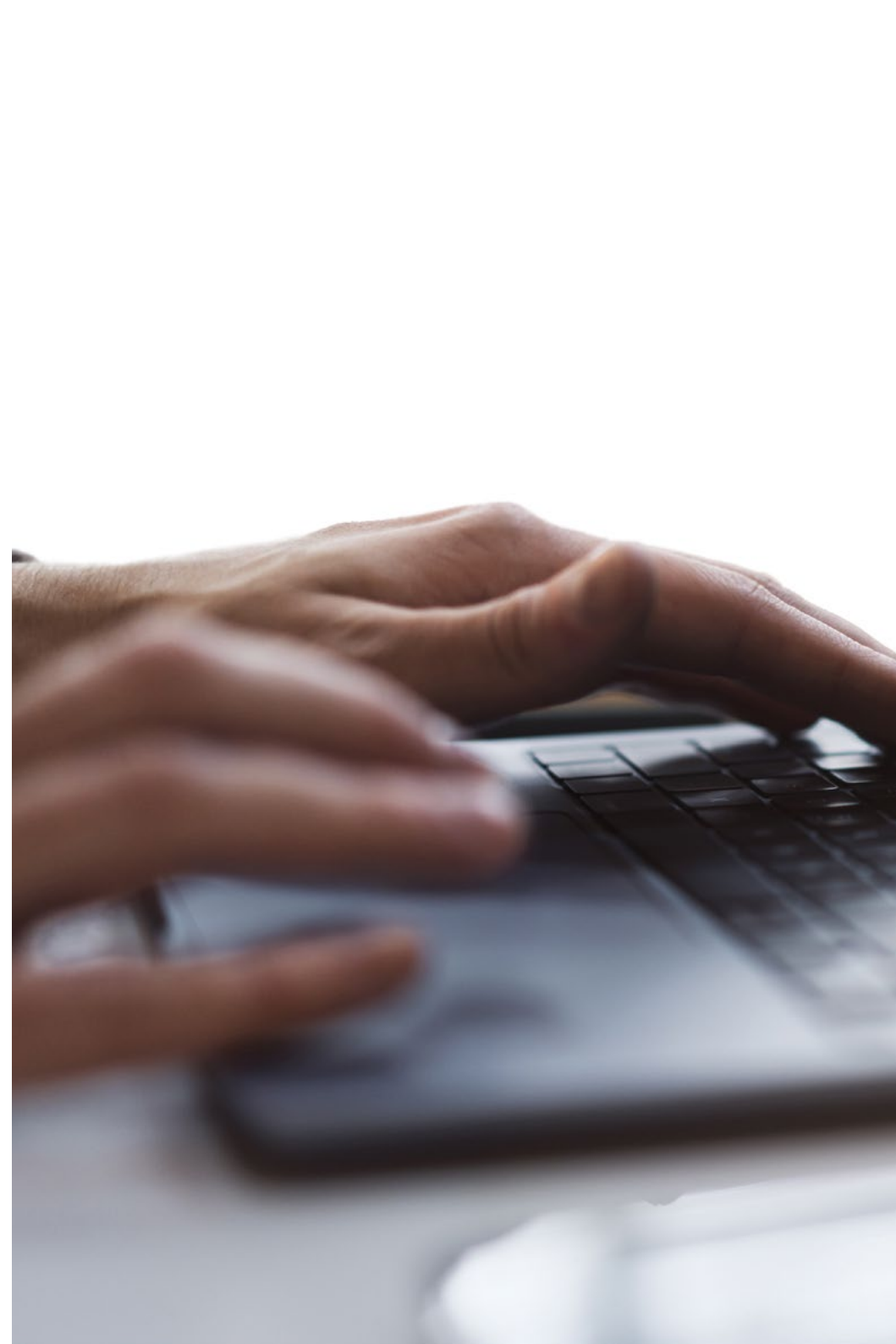
In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

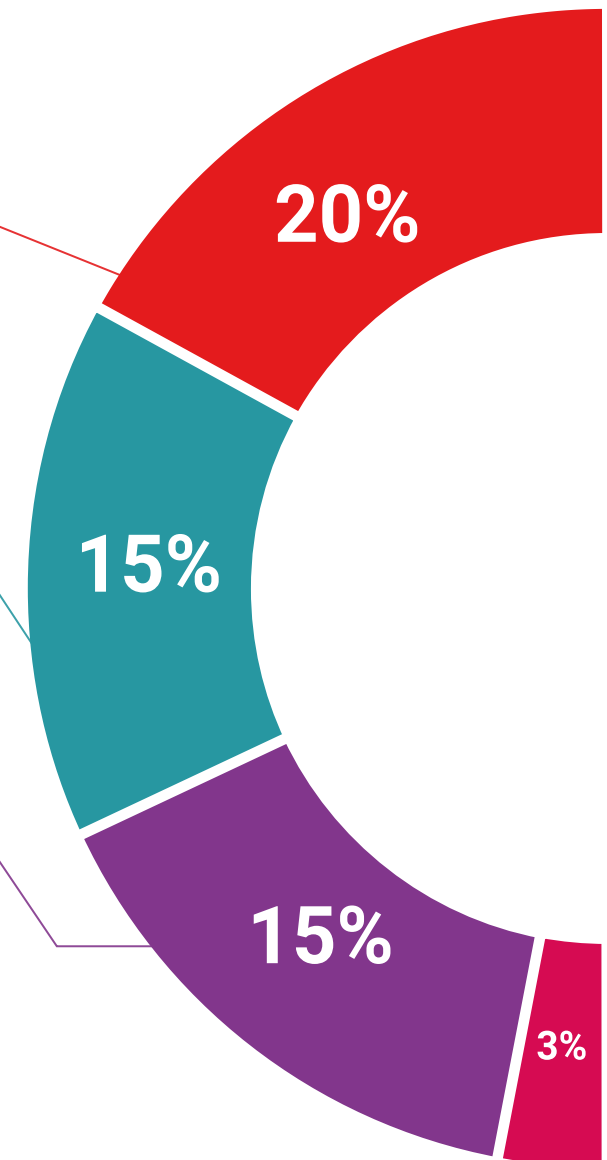
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

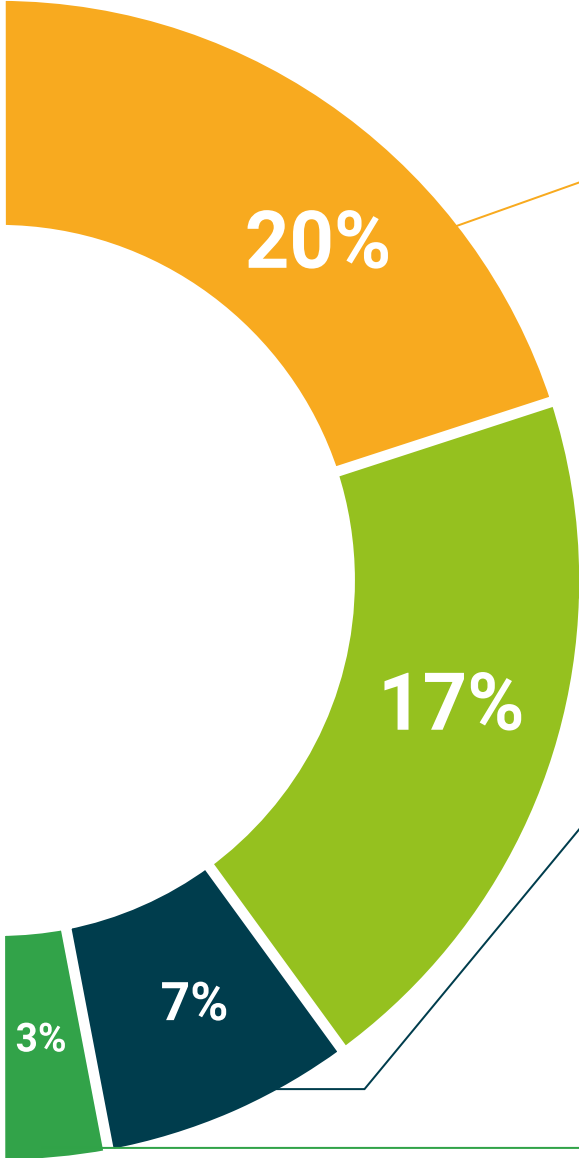
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



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 for future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.



06

Teaching Staff

This qualification has a world-class teaching staff, made up of experts in Agile methodologies with extensive experience in the technology sector. Thanks to their experience in the implementation of Scrum, Kanban and Lean in large companies, the mentors will offer a practical and applied vision that will allow students to fully understand the real challenges of Agile project management. In fact, these experts not only master key tools such as JIRA, Trello and Azure DevOps, but have also led development teams in innovative projects, optimizing processes and improving business efficiency.



“

The excellence of the teaching team makes this program a unique opportunity to specialize in Agile Development and enhance your professional growth in the technology industry"

Management



Dr. Lucas Cuesta, Juan Manuel

- ♦ Senior Software Engineer and Analyst at Indizen – Believe in Talent
- ♦ Senior Software Engineer and Analyst at Krell Consulting and IMAGiNA Artificial Intelligence
- ♦ Software Engineer at Intel Corporation
- ♦ Software Engineer at Intelligent Dialog Systems
- ♦ PhD in Electronic Systems Engineering for Intelligent Environments from the Polytechnic University of Madrid
- ♦ Graduate in Telecommunications Engineering at the Polytechnic University of Madrid
- ♦ Master's Degree in Electronic Systems Engineering for Intelligent Environments from the Polytechnic University of Madrid



Mr. Márquez Ruiz de Lacanal, Juan Antonio

- ♦ Software Developer at GTD Defense & Security Solutions
- ♦ Software Developer at Solera Inc
- ♦ Development and Research Engineer at GRVC Sevilla
- ♦ Co-founder of Unmute
- ♦ Co-founder of VR Educa
- ♦ Academic Exchange in Engineering and Entrepreneurship at the University of California, Berkeley
- ♦ Degree in Industrial Engineering from the University of Sevilla



Professors

Mr. Péris Millán, Eduardo

- ◆ Director of the Technological Consultancy Department
- ◆ Specialist in Computer Engineering
- ◆ Master's Degree in Strategic Management of Information and Knowledge in Organizations
- ◆ Master's Degree in Leadership and Public Management
- ◆ Expert in Public Management
- ◆ Expert in Computer Systems for Smart CITIES

“

A unique, key and decisive learning experience to boost your professional development”

07 Certificate

This Postgraduate Certificate in Agile Development Tools from Scratch guarantees, in addition to the most rigorous and up-to-date program, access to an Postgraduate Certificate diploma issued by TECH Global University.



“

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

This private qualification will allow you to obtain a diploma for the **Postgraduate Certificate in Agile Development Tools from Scratch** 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** private qualification, 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: **Postgraduate Certificate in Agile Development Tools from Scratch**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



*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.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development languages
virtual classroom



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