Postgraduate Certificate
Software Solution Quality

tech technological university

Postgraduate Certificate
Software Solution Quality

- » Modality: **online**
- » Duration: **12 weeks**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/information-technology/postgraduate-certificate/software-solution-quality**

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01
Introduction

In the midst of the diversity of types of software currently being developed, they all converge in the need for key solutions that provide quality in the development of the project. Achieving high standards in software development is the goal of every IT professional. This involves considering different aspects before, during and after designing the product. Students will have access to the most up-to-date syllabus on Software Solution Quality so that over 12 weeks they will be able to enhance their skills. Through a 100% online methodology and with the support of experts who will provide everything required for successful learning.
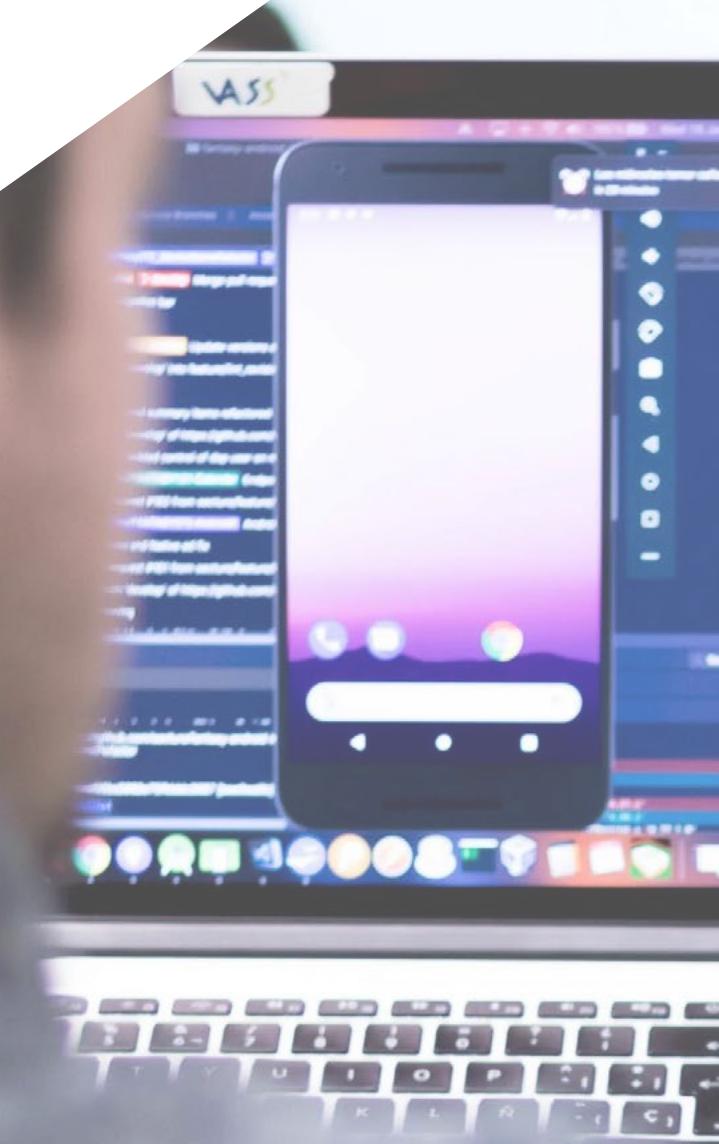
Acquire the most up-to-date knowledge on Software Solution Quality and get your diploma in only 12 weeks, 100% online"

Every software developer must consider the most effective way to provide answers with their product. In this case, the way customizers and developers create, package and maintain software units must also be framed in a quality process. So that functionalities can be installed, uninstalled or updates can be generated, ensuring a comprehensive risk reduction.

It is important to develop strategies to maintain the stability of a system and achieve optimal results, which is the reason why the technological maturity of a software project must be evaluated. It is also important to analyze the relevant measures to ensure the maintenance and control of subsequent versions, guaranteeing the quality of the same. Therefore, understanding and knowing how to apply all these aspects in practice is what makes a professional efficient and for this, they must delve deeper into the more specific topics.

In this Postgraduate Certificate in Software Solution Quality, the student will be guided by professional experts in the development area, who have exhaustively selected all the content so that, through different multimedia resources based on the most innovative 100% online methodology, they will be able to address reliability, metrics and assurance in software projects in a correct and strategic way.

While the online format gives students the flexibility they need to adapt the knowledge acquired to their current performance and generate projects with a high level of maturity, by learning the main quality criteria, the ISO/IEC 9126 standard, key aspects and measures to be adopted for quality. Knowing both models and metrics, for greater control and quality assurance.

This **Postgraduate Certificate in Software Solution Quality** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- Case studies presented by experts in software development
- The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions for experts and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection

TECH Technological University's methodology provides you with security and confidence in the most modern learning models"

"TECH Technological University offers you the most modern educational platform. Enroll now and reach the goal in 12 weeks"

Achieving quality results confers recognition to your brand. Professionalize yourself with this Postgraduate Certificate.

Efficiently apply TRL development levels in your next software projects.

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

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training 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 during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Objectives

The main objective of this program is to generate specialized knowledge at a theoretical and practical level in the application of all the necessary elements: norms, standards and maturity levels to the management of software projects, in an efficient and effective way. As well as models and metrics, for greater control and quality assurance. This is how the graduate will be able to shape their current performance towards a service of greater prestige and recognition, by providing efficient software solutions.

*As you study, you will be able to implement the skills you have developed in your daily work"*

General Objectives

- Develop the criteria, tasks and advanced methodologies to understand the relevance of quality-oriented work
- Analyze the key factors in the quality of a software project
- Develop the relevant regulatory aspects
- Implement DevOps and systems processes for Quality Assurance
- Reduce the technical debt of projects with a quality approach rather than an approach based on economics and short deadlines
- Provide the student with specialized knowledge to be able to measure and quantify the quality of a software project
- Defend the economic proposals of projects on the basis of the Quality approach

You will face new challenges and overcome them successfully. Thanks to what we have learned in this program"
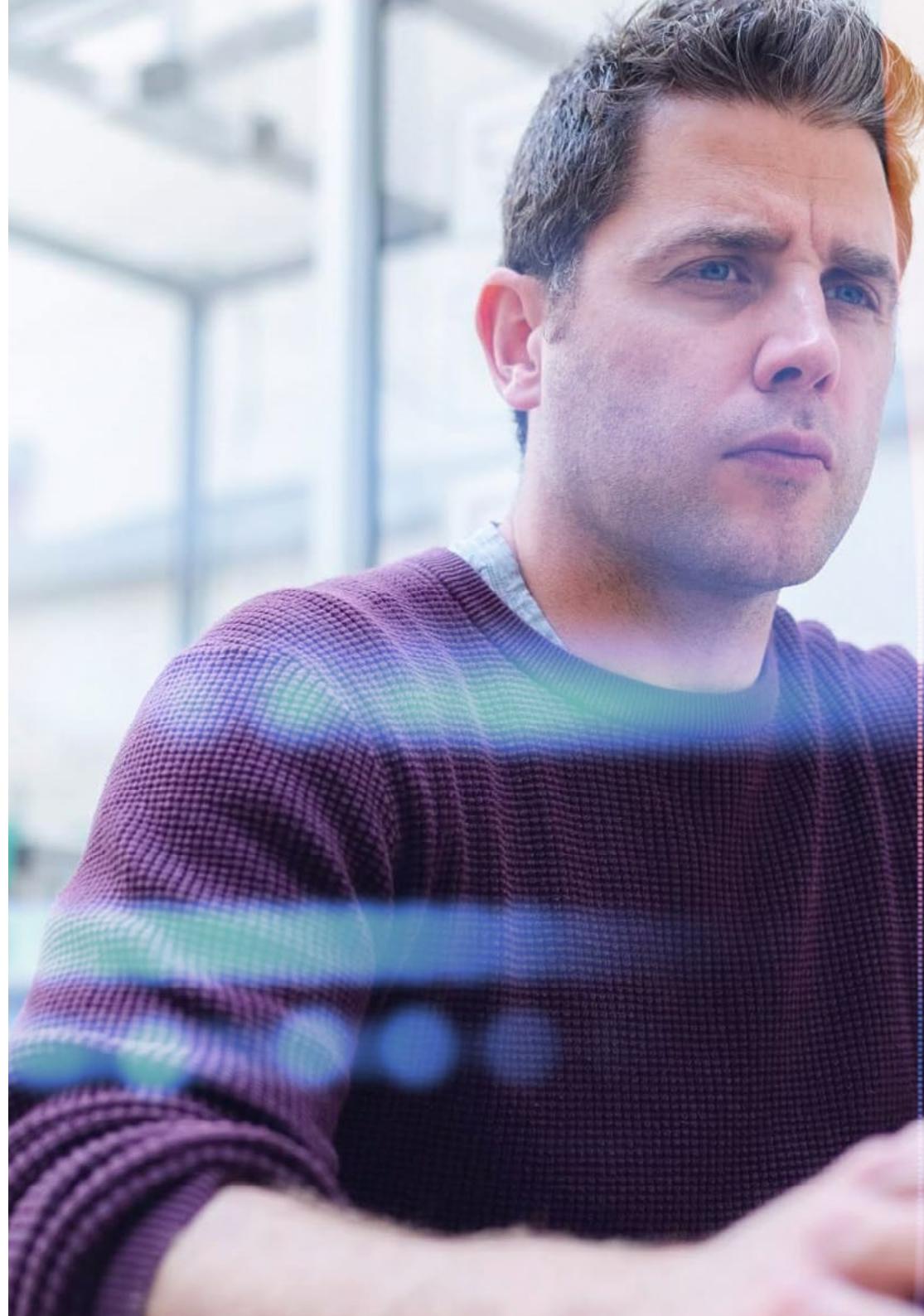
Specific Objectives

◆ Develop in a clear and concise way the elements that encompass software quality

◆ Apply the models and standards according to system, product and software process

◆ Delve into the ISO Quality standards applied both in general and in specific parts of the system

◆ Apply the standards according to the scope of the environment

◆ Examine the TRL maturity levels and adapt them to the different parts of the software project to be dealt with

◆ Acquire capacity of abstraction to apply one or several criteria of elements and levels of software quality

◆ Distinguish the cases of application of the standards and maturity levels in a real case simulated project

◆ Develop the concept of quality criteria and relevant aspects

◆ Examine the ISO/IEC 9126 standard, main aspects and indicators

◆ Analyze the different metrics for a software project to meet the agreed assessments

◆ Examine the internal and external attributes to be addressed in the quality of a software project

◆ Distinguish the metrics according to the type of programming (structured, object oriented, layered, etc.)

◆ Complete real simulation cases, as a continuous learning of quality measurement

◆ See in the simulation cases to what extent it is feasible or unnecessary, i.e. from a constructive point of view of the authors

03
Course Management

A teaching staff made up of specialists with extensive experience in the field of IT solutions and software development and research supervises this Postgraduate Certificate in Software Solution Quality, in order to provide the tools and knowledge required by future graduates focused on optimizing their performance and offering efficient solutions to their employer or client. This team of professionals will guide the student at all times, in order to achieve the objectives online while following the most avant-garde methodology implemented by TECH.

You can also achieve success, the decision is in your hands. Be guided by those who know"

International Guest Director

With an extensive professional career of more than 30 years in the technology sector, Daniel St. John is a prestigious **Computer Engineer** highly specialized in S**oftware Quality.** In this same line, he has established himself as a true leader in this field due to his pragmatic approach based on continuous improvement and innovation.

Throughout his career, he has been part of international reference institutions such as **General Electric Healthcare** in Illinois. In this way, his work has focused on optimizing the **digital infrastructures** of organizations with the aim of significantly improving the **user experience**. Thanks to this, multiple patients have enjoyed more personalized and agile care, with faster access to both clinical results and health follow-ups. At the same time, it has implemented technological solutions that have enabled professionals to make more informed **strategic decisions** based on large volumes of data.

He has also balanced this work with the creation of cutting-edge technological projects to maximize the effectiveness of the institutions' operational processes. In this regard, he has led the **digital transformation** of numerous companies belonging to different industries. As such, he has implemented emerging tools such as **Artificial Intelligence, Big Data or Machine Learning** to automate complex daily tasks. As a result, these organizations have managed to adapt to market trends with immediacy and ensure their long-term sustainability.

It is worth noting that Daniel St. John has participated as a speaker at various scientific congresses on a global scale. In this way, he has shared his vast knowledge in areas such as the adoption of **Agile Methodologies, Application Testing** to ensure the reliability of systems or implementation of innovative **Blockchain** techniques that guarantee the protection of confidential data.

Mr. St. John, Daniel

- Director of Software Engineering at General Electric Healthcare of Wisconsin, United States
- Head of Software Engineering at Siemens Healthineers, Illinois
- Director of Software Engineering at Natus Medical Incorporated, Illinois
- Senior Software Engineer at WMS Gaming of Chicago
- Senior Software Engineer at Siemens Medical Solutions, Illinois
- M.S. in Data Strategy and Analytics from Lake Forest Graduate School of Management B.S. in Computer Science from the University of Wisconsin-Parkside
- Illinois Institute of Technology Advisory Board Member
- Certifications in: Python for Data Science, Artificial Intelligence and Development, SAFe SCRUM, and Project Management.

"

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

Management

Mr. Molina Molina, Jerónimo

- AI Engineer & Software Architect. NASSAT - Internet Satellite in Motion
- Senior Consultant at Hexa Ingenieros. Introducer of Artificial Intelligence (ML and CV)
- Expert in artificial intelligence based solutions in the fields of Computer Vision, ML/DL and NLP. Currently investigating application possibilities of Transformers and Reinforcement Learning in a personal research project
- University Expert in Business Creation and Development. Bancaixa – FUNDEUN Alicante
- Computer Engineer. University of Alicante
- Master in Artificial Intelligence. Catholic University of Avila
- Executive MBA. European Business Campus Forum
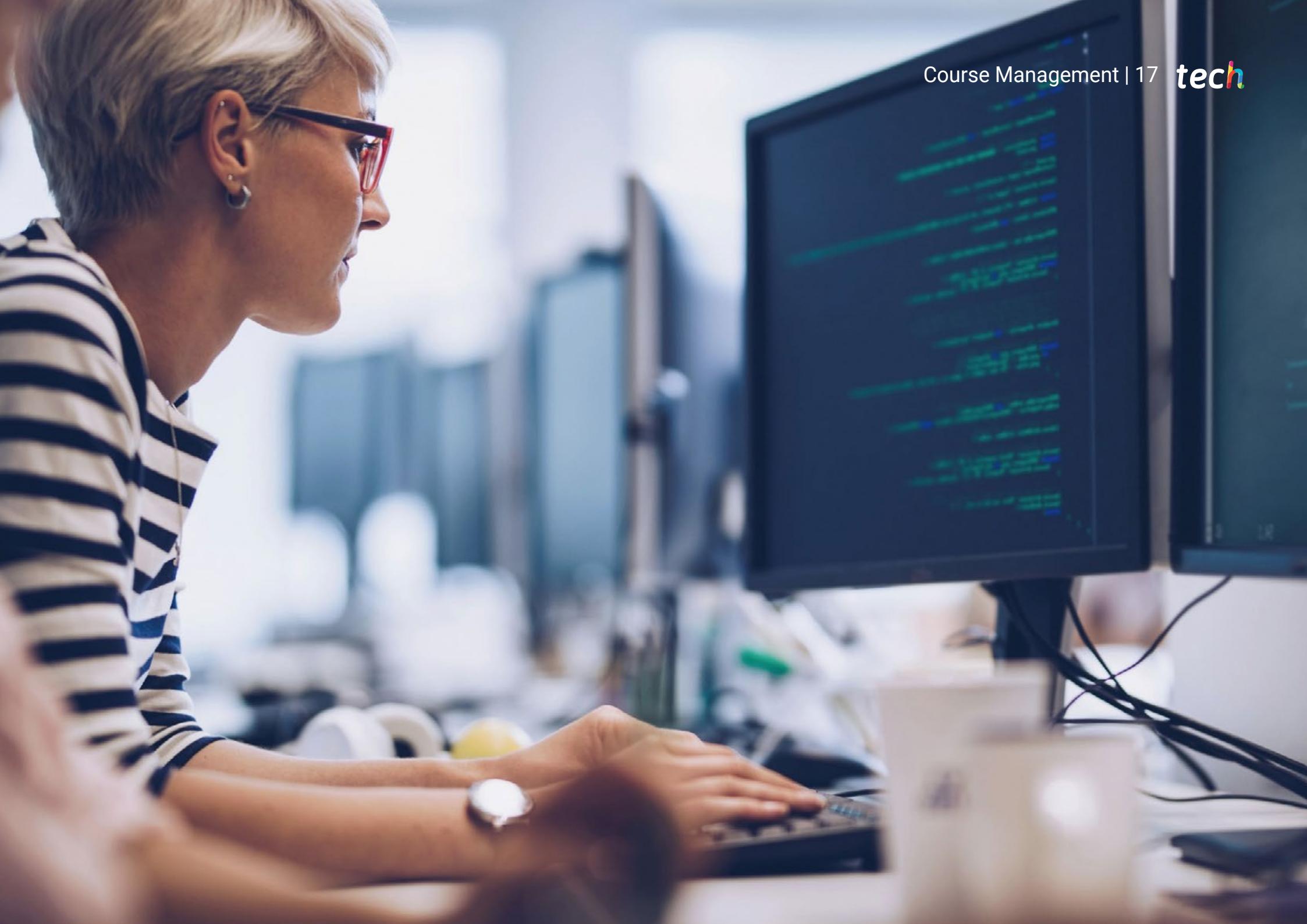
04
Structure and Content

By incorporating the most avant-garde methodology based on Relearning, the student is guaranteed a progressive and natural teaching of the most important terms and concepts related to Software Solution Quality. The large amount of educational material available, including real examples provided by the teaching team, makes up a first-class academic program that is rigorous, exhaustive and adapted to the current IT reality.

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Knowing the most specific content on Software Solution Quality will provide a unique background to your professional profile"

Module 1. Software Quality TRL Development Levels

1.1. Elements that Influence Software Quality (I). Technical Debt
  1.1.1. Technical Debt. Causes and Consequences
  1.1.2. Software Quality General Principles
  1.1.3. Unprincipled and Principled Quality Software
    1.1.3.1. Consequences
    1.1.3.2. Necessity of Applying Quality Principles in Software
  1.1.4. Software Quality Typology
  1.1.5. Quality Software. Specific Features
1.2. Elements that Influence Software Quality (II). Associated Costs
  1.2.1. Software Quality Influencing Elements
  1.2.2. Software Quality Misconceptions
  1.2.3. Software Quality Associated Costs
1.3. Software Quality Models (I). Knowledge Management
  1.3.1. General Quality Models
    1.3.1.1. Total Quality Management
    1.3.1.2. European Business Excellence Model (EFQM)
    1.3.1.3. Six-Sigma Model
  1.3.2. Knowledge Management Models
    1.3.2.1. Dyba Model
    1.3.2.2. SEKS Model
  1.3.3. Experience Factory and QIP Paradigm
  1.3.4. Quality in Use Models (25010)
1.4. Software Quality Models (III). Quality in Data, Processes and SEI Models
  1.4.1. Data Quality Data Model
  1.4.2. Software Process Modeling
  1.4.3. Software & Systems Process Engineering Metamodel Specification (SPEM)
  1.4.4. SEI Models
    1.4.4.1. CMMI
    1.4.4.2. SCAMPI
    1.4.4.3. IDEAL

1.5. ISO Software Quality Standards (I). Analysis of the Standards
  1.5.1. ISO 9000 Standards
    1.5.1.1. ISO 9000 Standards
    1.5.1.2. ISO Family of Quality Standards (9000)
  1.5.2. Other ISO Standards Related to Quality
  1.5.3. Quality Modeling Standards (ISO 2501)
  1.5.4. Quality Measurement Standards (ISO 2502n)
1.6. ISO Software Quality Standards (II). Requirements and Assessment
  1.6.1. Standards on Quality Requirements (2503n)
  1.6.2. Standards on Quality Assessment (2504n)
  1.6.3. ISO/IEC 24744: 2007
1.7. TRL Development Levels (I). Levels 1 to 4
  1.7.1. TRL Levels
  1.7.2. Level 1: Basic Principles
  1.7.3. Level 2: Concept and/or Application
  1.7.4. Level 3 Critical Analytical Function
  1.7.5. Level 4: Component Validation in Laboratory Environment
1.8. TRL Development Levels (II). Levels 5 to 9
  1.8.1. Level 5: Component Validation in Relevant Environment
  1.8.2. Level 6: System/Subsystem Model
  1.8.3. Level 7: Demonstration in Real Environment
  1.8.4. Level 8: Complete and Certified System
  1.8.5. Level 9: Success in Real Environment
1.9. TRL Development Levels. Uses
  1.9.1. Example of Company with Laboratory Environment
  1.9.2. Example of an R&D&I Company
  1.9.3. Example of an Industrial R&D&I Company
  1.9.4. Example of a Laboratory-Engineering Joint Venture Company
1.10. Software Quality Key Details
  1.10.1. Methodological Details
  1.10.2. Technical Details
  1.10.3. Software Project Management Details
    1.10.3.1. Computer System Quality
    1.10.3.2. Software Product Quality
    1.10.3.3. Software Process Quality

"

You are just a click from moving on to a new experience in your profession. Enroll now and become an expert in Software Solution Quality"

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.

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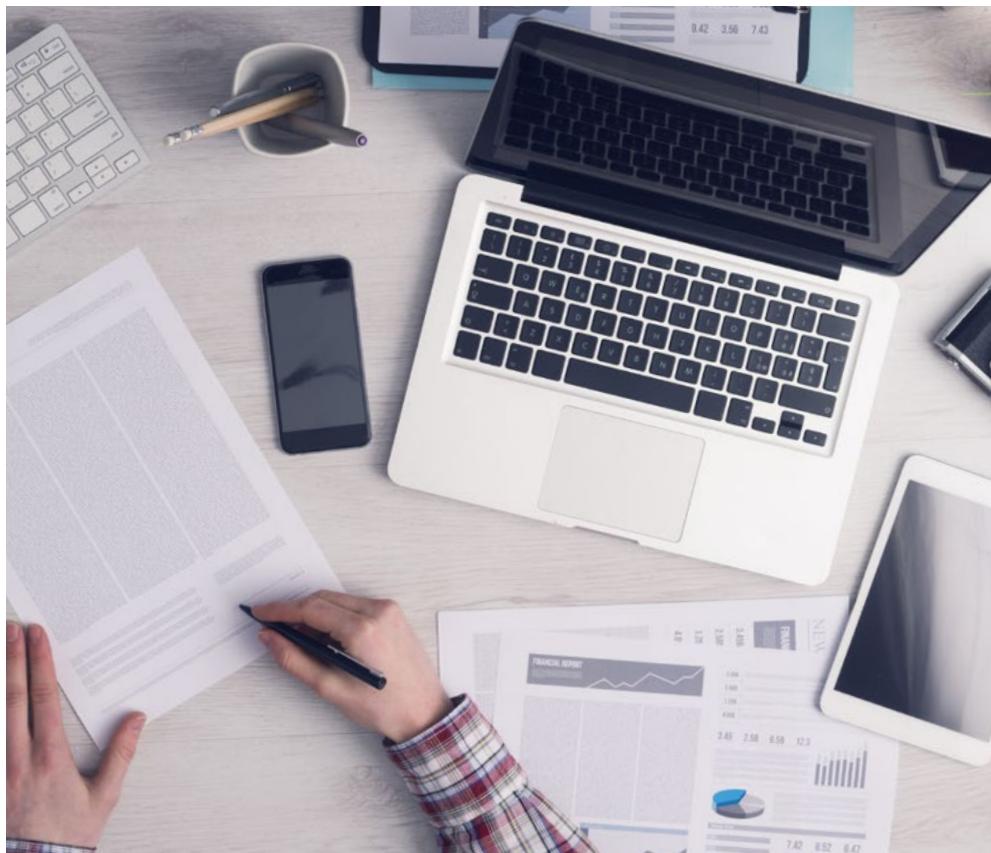
The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

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.

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 Postgraduate Certificate in Software Solution Quality guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Software Solution Quality** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Certificate in Software Solution Quality**

Official Nº of Hours: **300 h**

tech technological university

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

POSTGRADUATE CERTIFICATE
in

Software Solution Quality

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S   techtitute.com/certificates

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

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