



Postgraduate Diploma Software Quality Management

» Modality: online» Duration: 6 months

» Certificate: TECH Global University

» Credits: 18 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/information-technology/postgraduate-diploma/postgraduate-diploma-software-quality-management

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Certificate

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The importance of a good software developer's work lies mainly in delivering products with the expected quality, in order to satisfy the needs of a final consumer and preventing future risks. Although all software can have bugs, it is important to make sure that they do not exist, since their consequences can be very adverse. It should be noted that the later the defects are detected, the greater the consequences may be. The objective of Software Quality Management is to support all requirements; to be user-friendly, secure, useful, usable, stable, and to satisfy the user's needs and requirements without errors.

To provide clear solutions to users' needs, from a user-friendly and comfortable aspect, it is necessary to know each of the indicators of the software quality process and how your product is performing. As well as, to examine the technological maturity, counting with a specialized knowledge in the application of the elements, norms, standards in an efficient and effective way.

In this program, each and every one of these aspects will be determined, so that the graduate will be able, in practice, to address the reliability, metrics and assurance points correctly and strategically. In this sense, you will also be able to identify existing failure points during your assessment and implement the DevOps culture in a correct way. Taking into account the importance of process automation to avoid human errors in its development, adjusted to the quality criteria according to the ISO/IEC 9126 standard.

All this will be taught through a completely secure digital platform and the various interactive media implemented by TECH Global University, to ensure that students learn correctly. Using the most innovative methodology based on Relearning, which allows a quick grasp of the concepts thanks to their reiteration. The structure of the program consists of 3 Modules, divided into various units and subunits, which will make it possible to study in a maximum of 6 months, from any device with Internet connection.

This **Postgraduate Diploma in Software Quality Management** 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 development
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- 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



This Postgraduate Diploma offers you the most up-to-date knowledge in Software Quality Management. Enroll now"



Learn to distinguish the metrics according to the type of programming, evaluating the internal and external attributes in the quality of a software project"

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.

Enroll now and become an expert in Software Quality Management, in only 6 months and 100% online.

Develop specialized knowledge in DevOps culture and its implementation in software development.







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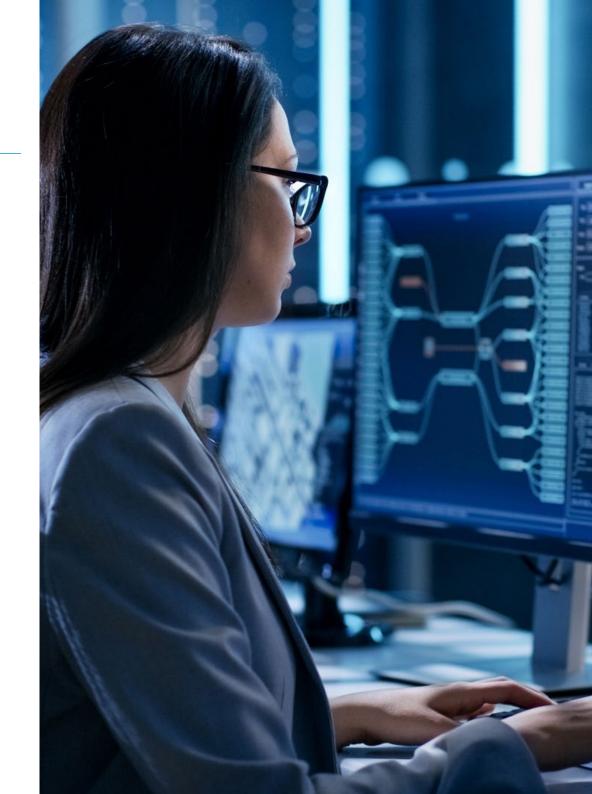


General Objectives

- 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



With TECH Global University, you can professionalize in an efficient and agile way. Thanks to its Relearning and 100% online methodology, which allows a faster memorization of the concepts"





Module 1. Software Quality TRL Development Levels

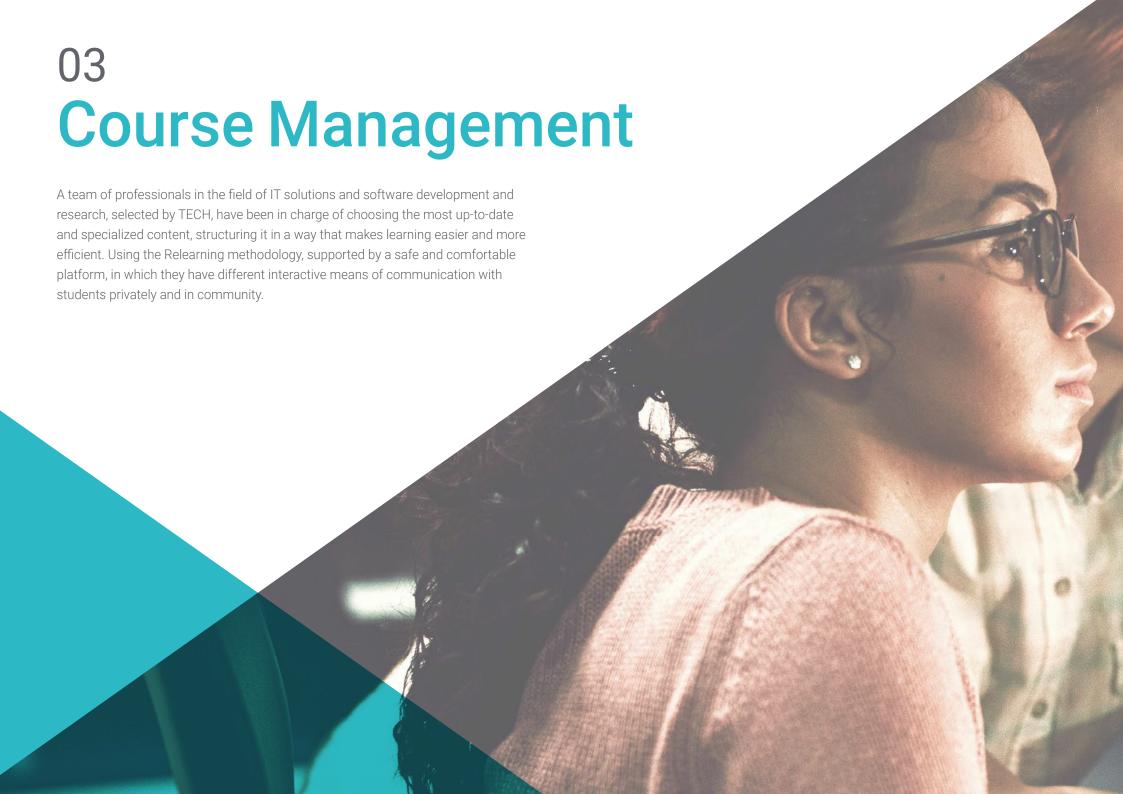
- Develop in a clear and concise way the elements that encompass software quality
- Apply the models and standards according to system, product and software process
- Delve into the ISO Quality standards applied both in general and in specific parts of the system
- Apply the standards according to the 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

Module 2. DevOps. Software Quality Management

- Analyze the shortcomings of a traditional process
- Assess the possible solutions and choose the most suitable one
- Understanding business needs and their impact on implementation
- Assess the costs of the improvements to implement
- Develop an evolvable software lifecycle, adapted to real need
- Anticipate possible errors and avoid them from the design process
- Justify the use of different implementation models

Module 3. ISO/IEC 9126 Quality Criteria. Software Quality Metrics

- 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



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 **Software 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

- Al 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

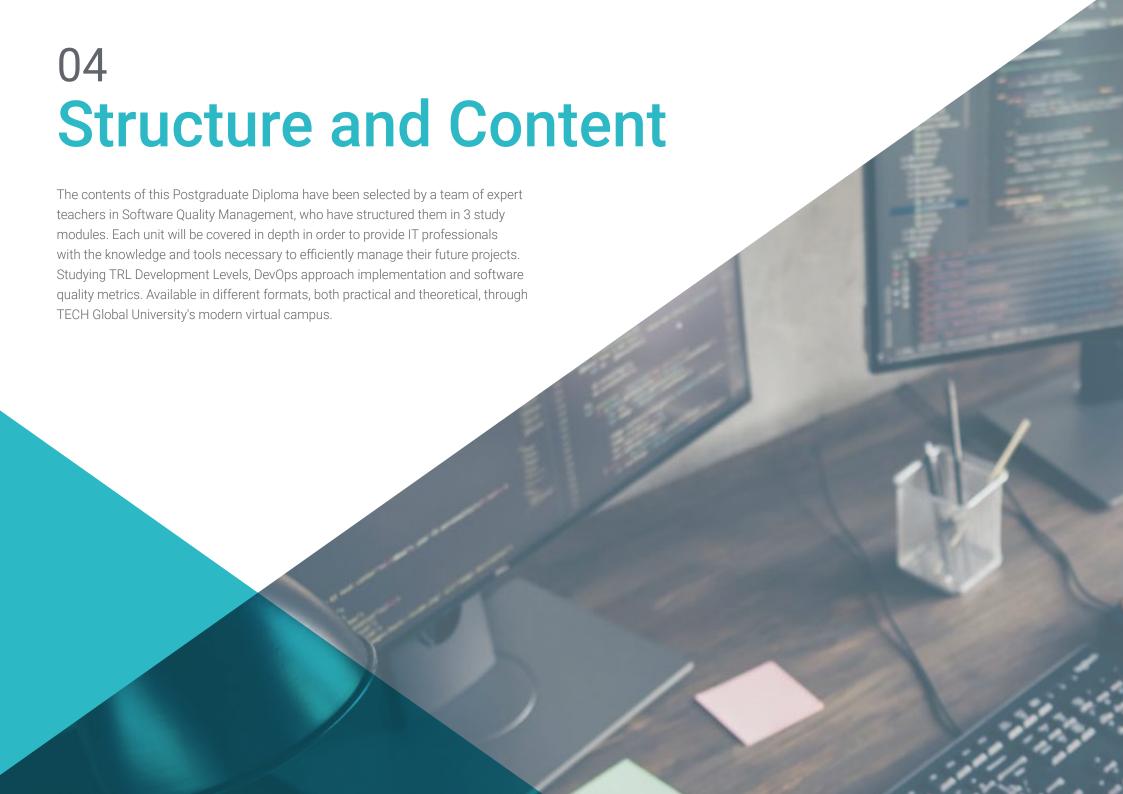


Course Management | 17 tech

Professors

Mr. Tenrero Morán, Marcos

- DevOps Engineer Allot Communications
- Application Lifecycle Management & DevOps- Meta4 Spain. Cegid
- QA Automation Engineer Meta4 Spain. Cegid
- Graduated in Computer Engineering from Rey Juan Carlos University
- Development of professional applications for Android Galileo University, Guatemala
- Cloud Services Development (nodeJs, JavaScript, HTML5) UPM
- Continuous Integration with Jenkins Meta4. Cegid
- Web Development with Angular-CLI (4), Ionic and nodeJS. Meta4 -Rey Juan Carlos University





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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.
- 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

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- 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. Quality of Computer Systems
 - 1.10.3.2. Software Product Quality
 - 1.10.3.3. Software Process Quality

Module 2. DevOps. Software Quality Management

- 2.1. DevOps. Software Quality Management
 - 2.1.1. DevOps.
 - 2.1.2. DevOps and Software Quality
 - 2.1.3. DevOps. Benefits of DevOps Culture
- 2.2. DevOps. Relation to Agile
 - 2.2.1. Accelerated Delivery
 - 2.2.2. Quality
 - 2.2.3. Cost Reduction
- 2.3. DevOps Implementation
 - 2.3.1. Problem identification
 - 2.3.2. Implementation in a Company
 - 2.3.3. Implementation Metrics
- 2.4. Software Delivery Cycle
 - 2.4.1. Design Methods
 - 2.4.2. Agreements
 - 2.4.3. Roadmap
- 2.5. Error-Free Code Development
 - 2.5.1. Maintainable Code
 - 2.5.2. Development Patterns
 - 2.5.3. Code Testing
 - 2.5.4. Software Development at Code Level Good Practices
- 2.6. Automation
 - 2.6.1. Automization Types of Tests
 - 2.6.2. Cost of Automation and Maintenance
 - 2.6.3. Automization Mitigating Errors

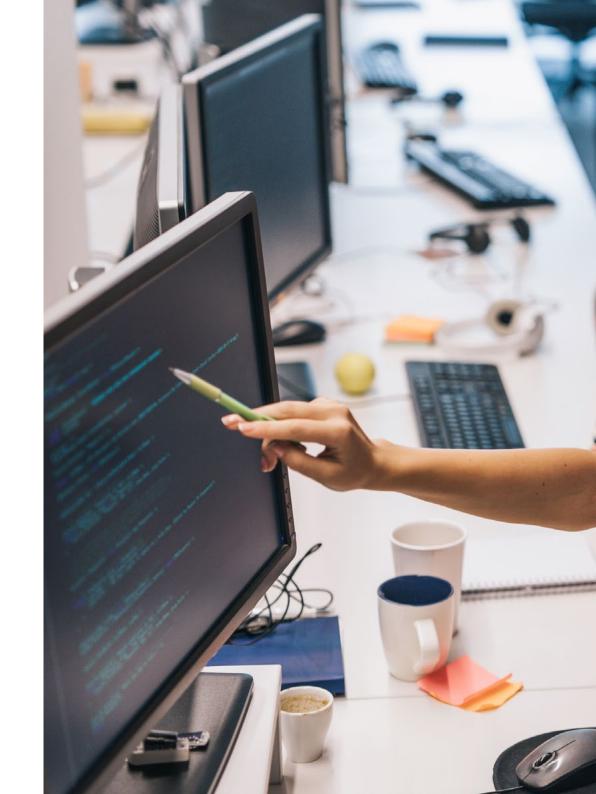
- 2.7. Deployment
 - 2.7.1. Target Assessment
 - 2.7.2. Design of an Automatic and Adapted Process
 - 2.7.3. Feedback and Responsiveness
- 2.8. Incident Management
 - 2.8.1. Incident Management
 - 2.8.2. Incident Analysis and Resolution
 - 2.8.3. How to Avoid Future Mistakes
- 2.9. Deployment Automation
 - 2.9.1. Preparing for Automated Deployments
 - 2.9.2. Assessment of the Health of the Automated Process
 - 2.9.3. Metrics and Rollback Capability
- 2.10. Good Practices. Evolution of DevOps
 - 2.10.1. Guide of Good Practices applying DevOps
 - 2.10.2. DevOps. Methodology for the Team
 - 2.10.3. Avoiding Niches

Module 3. ISO, IEC 9126 Quality Criteria. Software Quality Metrics

- 3.1. Quality Criteria. ISO, IEC 9126 Standard
 - 3.1.1. Quality Criteria.
 - 3.1.2. Software Quality Justification. ISO, IEC 9126 Standard
 - 3.1.3. Software Quality Measurement as a Key Indicator
- 3.2. Software Quality Criteria Features
 - 3.2.1. Reliability
 - 3.2.2. Functionality
 - 3.2.3. Efficiency
 - 3.2.4. Usability
 - 3.2.5. Maintainability
 - 3.2.6. Portability
 - 3.2.7. Security/safety

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- 3.3.1. Description of ISO, IEC 9126 Standard
- 3.3.2. Functionality
- 3.3.3. Reliability
- 3.3.4. Usability
- 3.3.5. Maintainability
- 3.3.6. Portability
- 3.3.7. Quality in Use
- 3.3.8. Software Quality Metrics
- 3.3.9. ISO 9126 Quality Metrics
- 3.4. ISO Standard, IEC 9126 (II). McCall and Boehm Models
 - 3.4.1. McCall Model: Quality Factors
 - 3.4.2. Boehm Model
 - 3.4.3. Intermediate Level. Features
- 3.5. Software Quality Metrics (I). Components
 - 3.5.1. Measurement
 - 3.5.2. Metrics
 - 3.5.3. Indicator3.5.3.1. Types of Indicators
 - 3.5.4. Measurements and Models
 - 3.5.5. Scope of Software Metrics
 - 3.5.6. Classification of Software Metrics
- 3.6. Software Quality Measurement (II). Measurement Practice
 - 3.6.1. Metric Data Collection
 - 3.6.2. Measurement of Internal Product Attributes
 - 3.6.3. Measurement of External Product Attributes
 - 3.6.4. Measurement of Resources
 - 3.6.5. Metrics for Object-Oriented Systems





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- Design of a Single Software Quality Indicator
 - Single Indicator as a Global Qualifier
 - Indicator Development, Justification and Application
 - Example of Application. Need to Know the Detail
- Simulation of Real Project for Quality Measurement (I)
 - Project Overview (Company A)
 - Application of Quality Measurement 3.8.2.
 - Proposed Exercises 3.8.3.
 - Proposed Exercises Feedback
- Real Project Simulation for Quality Measurement (II)
 - Project Overview (Company B)
 - Application of Quality Measurement
 - 3.9.3. Proposed Exercises
 - Proposed Exercises Feedback
- 3.10. Real Project Simulation for Quality Measurement (III)
 - 3.10.1. General Description of the Project (Company C)
 - 3.10.2. Application of Quality Measurement
 - 3.10.3. Proposed Exercises
 - 3.10.4. Proposed Exercises Feedback



Enroll in this program now and get the most up-to-dat and get the most up-to-date knowledge on Software Quality Management. Graduating as an expert in just 6 months"





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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.



Methodology | 29 tech

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.





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.

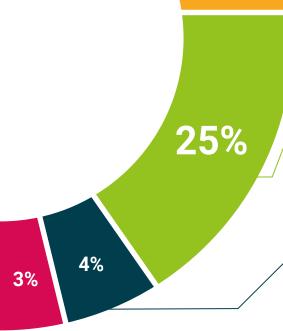


This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

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.





20%





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This program will allow you to obtain your **Postgraduate Diploma in Software Quality Management** 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: Postgraduate Diploma in Software Quality Management

Modality: online

Duration: 6 months

Accreditation: 18 ECTS



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

Postgraduate Diploma in Quality in Software Quality Management

This is a program of 450 hours of duration equivalent to 18 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 Ia Vella, on the 28th of February of 2024



^{*}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.

health confidence people
leducation information tutors
guarantee accreditation teaching
institutions technology learning
community commitment



Postgraduate Diploma Software Quality Management

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- » Schedule: at your own pace
- » Exams: online

