

# Postgraduate Certificate

## Requirements Management and Process Analysis in Software Development Projects





## Postgraduate Certificate Requirements Management and Process Analysis in Software Development Projects

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: [www.techtute.com/pk/information-technology/postgraduate-certificate/requirements-management-process-analysis-software-development-projects](http://www.techtute.com/pk/information-technology/postgraduate-certificate/requirements-management-process-analysis-software-development-projects)

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# 01

# Introduction

When it comes to managing and leading a software development project, specialized knowledge is required to understand all the processes involved. The role of the Business Analyst is in high demand in the field, as they are in charge of examining data to improve procedures within a company. The following program has been developed with this in mind to help students specialized in computer science to approach the most advanced techniques and tools for Software Product Development and Project Control and Management.





“

*Acquire the skills to become one of the most important figures in a software project. Enroll now”*



The methodologies used for Project Management, especially in the IT department, are becoming more relevant in the sector. Thus is born the figure of the Business Analyst, a professional specialized in advising on the interaction technology users. They also notify how business is functioning by examining the inputs and outputs of information and data.

With this Postgraduate Certificate in Requirements Management and Process Analysis in Software Development Projects, students will learn the main methodologies used in Information Systems Development, such as SDLC, Agile and Object Oriented. By carrying out Process Analyses and Data Flow Diagrams, students will be able to produce complete Data Bases to interpret the information so as to provide ingenious solutions to the company's problems.

With all this knowledge, students will be able to improve business processes, taking into account the possibilities offered by Technology and the Technical Design of Applications or Systems. Thus, they will increase their professional opportunities to opt for a managerial position within the company.

The **Postgraduate Certificate in Requirements Management and Process Analysis in Software Development Projects** contains the most complete and up-to-date educational program on the market. The most important features include:

- ◆ Analysis of everything involved in the Management and Direction of an IT Project, both in a productive and human sense
- ◆ Specific knowledge in the field of Team Management, with Innovative Methodologies adapted to New Technological Realities
- ◆ Extensive audiovisual content throughout the learning process, which makes study work easier and more enjoyable
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*Generate specialized knowledge about Process Analysis and requirements during Software Development Processes”*



*Learn the usefulness of Databases in a didactic way, using real cases”*

*By enrolling in the program, you will gain an advantage over the rest of your competition.*

*Learn about the different roles and functions of the New Information Systems Analyst.*

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

Providing students with all the knowledge and skills they need to assume the role of Business Analyst within a Development Project is one of the objectives of this Postgraduate Certificate. It also seeks to go a step further, offering them various strategies to improve the processes of a company, growing professionally at an international level. To do so, they will have to understand the main methodologies such as SDLC, Agile and Object Oriented. Students will then be able to stand out above their peers, becoming a benchmark of excellence.





“

*Solve the company's current problems,  
acting as an interlocutor between users  
and the Development Team”*



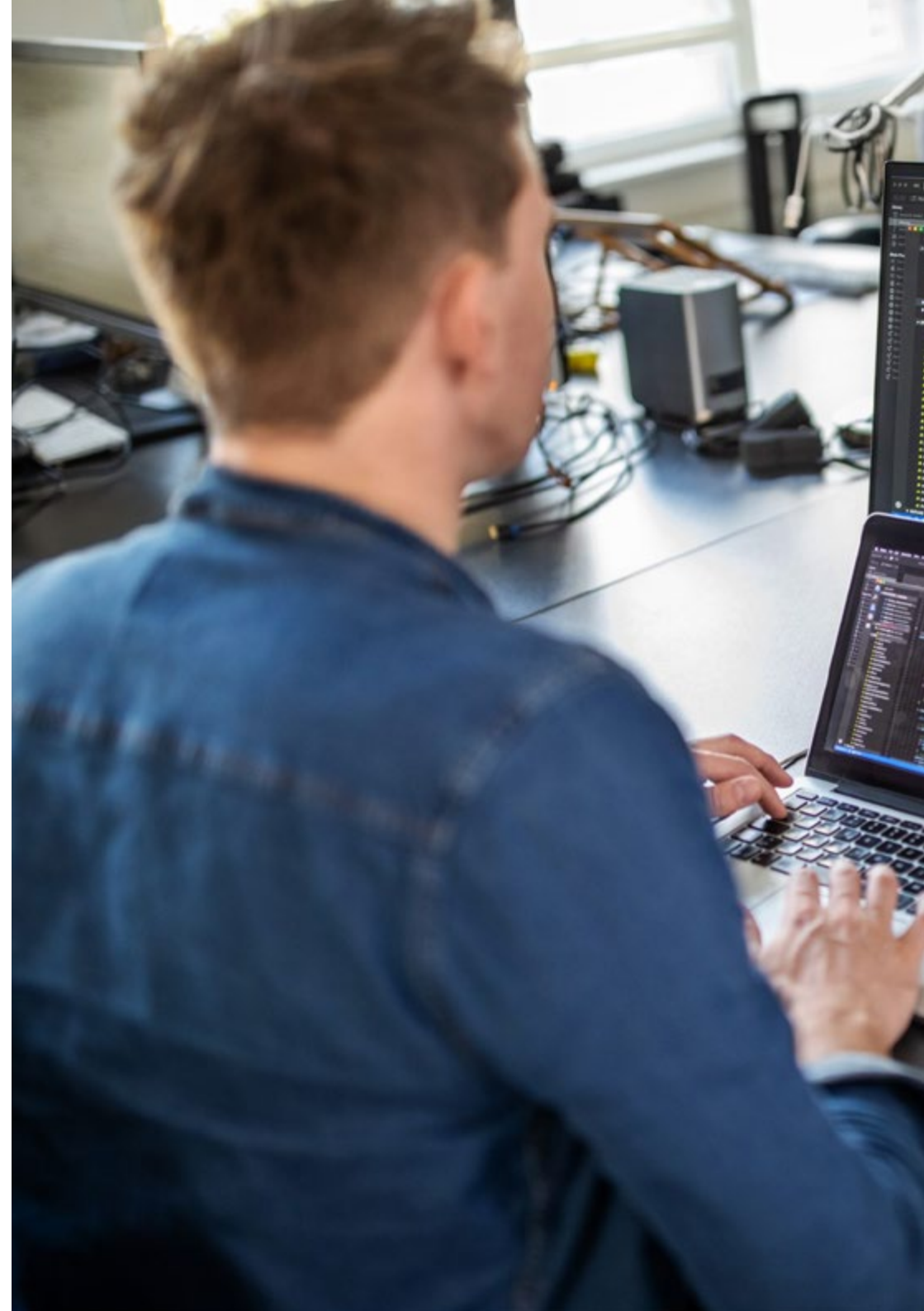
## General Objectives

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- ◆ Analyze the different "roles" and functions of a Business Analyst
- ◆ Examine the different Data Collection Methods
- ◆ Develop DFD examples and E-R examples for Databases

“

*Always go one step further. Enroll in this program and gain access to the knowledge you need to be a key part of your organization”*





## Specific Objectives

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- ◆ Generate specialized knowledge about Process Analysis and requirements during Software Development Processes
- ◆ Integrate Process Analysis and requirements within Project Management Methodologies
- ◆ Establish best practices in Data Management that ensure the integrity of designed Information Systems
- ◆ Examine the phases of Analysis Life Cycles and their relationship to a Project Management Strategy and Quality Management Strategy
- ◆ Develop practical examples based on Business

# 03

# Course Management

The teaching staff assembled for this Postgraduate Certificate has extensive academic and professional experience in the sector. They have been part of important design and development projects, in addition to advising telephone and security jobs. They have also been able to reach relevant positions as CTOs and CEOs, developing and leading their own companies. Therefore, they have the knowledge to train students in process analysis and elaboration of data flow diagrams.







“

*Do you plan to develop a technology company?  
By enrolling in this program, you will benefit from  
the leadership and management experience of  
an excellent teaching team”*



## Management



### Dr. Peralta Martín-Palomino, Arturo

- ♦ CEO and CTO at Prometheus Global Solutions
- ♦ CTO in AI Shephers GmbH
- ♦ CTO at Korporate Technologies
- ♦ Director of Design and Development at DocPath Document Solutions
- ♦ Computer Science Engineer from the University of Castilla la Mancha
- ♦ Doctorate in Psychology from the University of Castilla la Mancha
- ♦ PhD in Economics, Business and Finance from Camilo José Cela University
- ♦ Master's Degree in Advanced Information Technologies from the University of Castilla la Mancha
- ♦ MBA+E (Master's Degree in Business Administration and Organisational Engineering) from the University of Castilla la Mancha



## Professors

### Mr. Gómez Esteban, Enrique

- ◆ Oracle database administrator at NATO, Alten, ViewNext, Everis and Psa Group (Peugeot)
- ◆ Project Manager at Telefónica
- ◆ Head of Security at FNMT
- ◆ Technical Advisor at IBM Sterling and IBM Aspera
- ◆ Software Engineer at NCR Corporation
- ◆ Computer Expertise in Commercial/Civil, Criminal and Extrajudicial areas in the Community of Madrid
- ◆ Computer Engineer, Polytechnical University of Madrid
- ◆ Postgraduate Master's Degree in Computer Security and Communications from Universidad Politécnica de Madrid

# 04

## Structure and Content

The content on the program has been designed by experts in the field, who have participated in multiple Software Development Projects up to the point of leading their own company. It is important for students to know how to operate Systems Analysis and Design using SDLC, Object Oriented and Agile Methodologies. Thanks to all this content, students specialized in computer science will be able to learn the functions of a Business Analyst and perform them as such. Thus, proving their skills and value for their workplace.





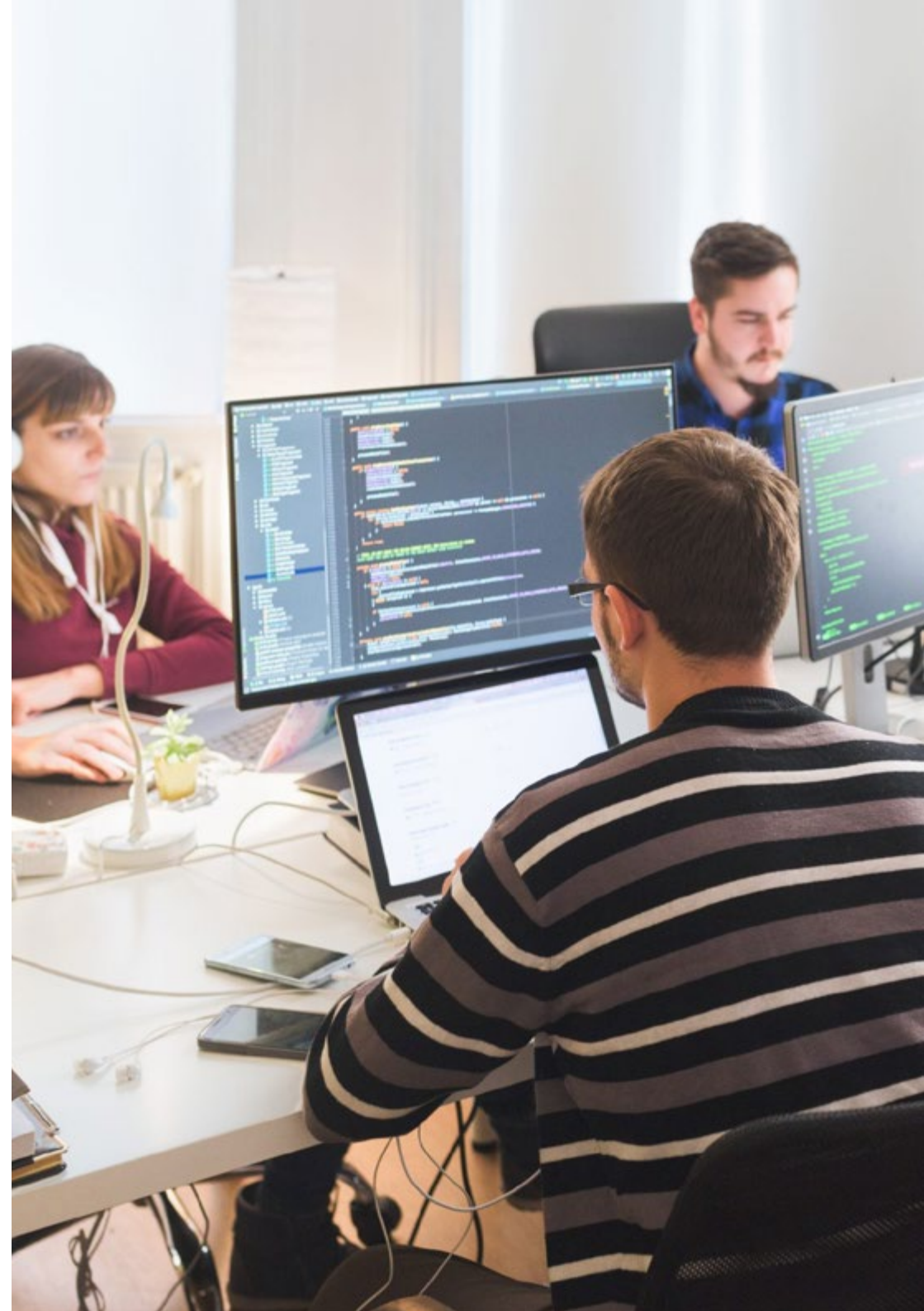


“

*By increasing your ability to manage a development project, your professional profile will be appreciated by large companies in the sector”*

## Module 1. Requirements Management and Process Analysis in Software Development Projects

- 1.1. Systems Analysis
  - 1.1.1. Systems Analysis Functions
  - 1.1.2. Software Development Cycle: SDLC and OO Agile
  - 1.1.3. SDLC, OO and Agile
- 1.2. Importance of System Analysis and Design
  - 1.2.1. Information Systems
  - 1.2.2. Integrating IT Technologies: HW and Software
  - 1.2.3. Methodology Selection
- 1.3. Software Development Life Cycle
  - 1.3.1. Campaigns and Types
  - 1.3.2. Redemption and Drive
  - 1.3.3. Types of Strategies
  - 1.3.4. Digital Marketing Plans
- 1.4. Systems Model and Design: Integration
  - 1.4.1. Dependencies with Other Operating Systems in the Organization
  - 1.4.2. Integration with Project Management Methodologies such as PMBOOK
  - 1.4.3. Integration with Agile Methods
- 1.5. Requirements
  - 1.5.1. Interactive Methods: Interviews, JAD and Questionnaires
  - 1.5.2. Non-interactive Methods: Observation, Document Review
  - 1.5.3. Sampling Techniques: Sampling
- 1.6. Processes Analysis: DFD
  - 1.6.1. Multilevel DFD Development
  - 1.6.2. DFD Types: Physical and Logical, Based on Events
  - 1.6.3. DFD Partitioning







- 1.7. Processes Analysis: Data Dictionary
  - 1.7.1. Creating Data Dictionaries Based on Previous DAFD
  - 1.7.2. Data Dictionary Nomenclature
  - 1.7.3. XML Creation for Data Exchange with Other Systems
- 1.8. Processes Analysis: Processes Specifications
  - 1.8.1. Structured and Semi-structured Decisions
  - 1.8.2. *If-The-Else*
  - 1.8.3. Decision Tables and Trees
- 1.9. Importance of Design
  - 1.9.1. Output Design
  - 1.9.2. Input Design
  - 1.9.3. Validating Design
- 1.10. Database Design
  - 1.10.1. Data Standardization
  - 1.10.2. E-R Diagrams: One-to-many and Many-to-many Relations
  - 1.10.3. Destandardization

“Solve the problems that prevent a company from moving forward and become an SDLC and Agile trained Business Analyst”

# 05 Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: ***Relearning***.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*



## At TECH we use the Case Method

Our program offers a revolutionary method of skills and knowledge development. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“

*At TECH, you will experience a way of learning that is shaking the foundations of traditional universities around the world.”*



*We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.*



### A learning method that is different and innovative.

This intensive Information Technology program at TECH Technological University prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH Technological University you will use Harvard *case studies*, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.

“

*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

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

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

Our university is the first in the world to combine Harvard University case studies with a 100%-online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance Harvard case studies 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 university in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



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

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your 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.



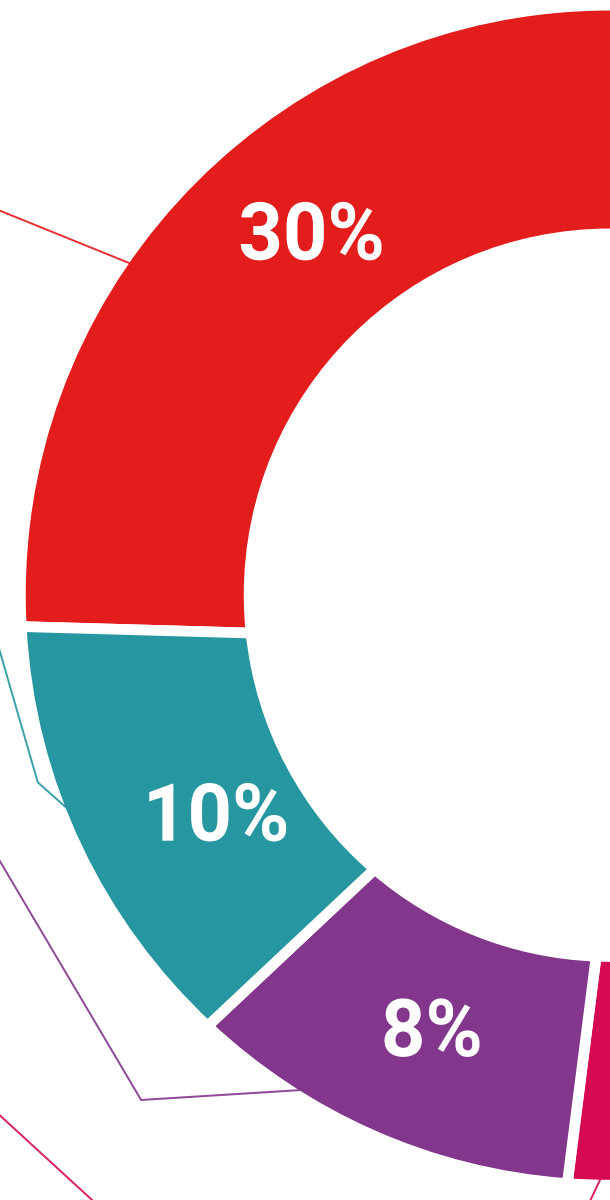
### Practicing Skills and Abilities

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



### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





#### Case Studies

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management 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 multimedia content presentation training Exclusive system 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 your goals.





# 06 Certificate

The Postgraduate Certificate in Requirements Management and Process Analysis in Software Development Projects guarantees, in addition to the most rigorous and up-to-date training, access to a qualification university issued by TECH Technological University.







*Successfully complete this training program  
and receive your university certificate  
without travel or laborious paperwork"*

The **Postgraduate Certificate in Requirements Management and Process Analysis in Software Development Projects** contains the most complete and up-to-date scientific 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 certificate 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 Requirements Management and Process Analysis in Software Development Projects**

Official N° of hours: **150**



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

health

future

confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commit

**tech** technological  
university

personalized service innovation

knowledge present  
online development languages  
classroom

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- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

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Requirements Management and  
Process Analysis in Software  
Development Projects