

# Postgraduate Certificate Six Sigma Methodology



## Postgraduate Certificate Six Sigma Methodology

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

Website: [www.techitute.com/in/engineering/postgraduate-certificate/six-sigma-methodology](http://www.techitute.com/in/engineering/postgraduate-certificate/six-sigma-methodology)

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01

# Introduction

The Six Sigma Methodology is a crucial tool for engineers seeking to improve process quality and efficiency. Its approach is based on the identification and elimination of defects in procedures, leading to reduced costs and increased customer satisfaction. As an engineer, it is essential to master this methodology in order to lead quality improvement projects and increase the efficiency of processes in the company. For this reason, TECH has designed a degree that allows students to increase their knowledge to the maximum on aspects such as Taguchi Methodology, Inspection with Rectification or Quality Standards, among others. All this, thanks to a 100% online modality and with the most dynamic and practical multimedia materials available in the academic market.

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*Enroll now and acquire new skills on Data Description and Exploration quickly and in a 100% online modality”*

In an increasingly competitive world, mastering the Six Sigma Methodology can make the difference between a successful company and one that lags behind. This methodology is essential for engineers seeking to improve the quality and efficiency of processes, analyze and measure process performance, or improve collaboration and communication in companies.

For this reason, TECH has designed a Postgraduate Certificate in Six Sigma Methodology with which it seeks to provide students with the necessary skills and competencies to be able to perform their work as specialists, with the highest possible efficiency and quality. Thus, throughout this program, aspects such as Control Charts, Statistical Quality Assurance or Sequential Sampling will be addressed.

And all this, through a convenient 100% online mode that allows students to organize their schedules and studies, combining them with their other work and interests. In addition, this degree has the most complete theoretical and practical materials on the market, which facilitates the student's study process and allows them to achieve their objectives quickly and efficiently.

This **Postgraduate Certificate in Six Sigma Methodology** 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 Applied Statistics.
- ◆ 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 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

“*Put the skills you acquire to the test, thanks to the most challenging practical exercises on the market*”

“*Enjoy all the content on Six Sigma Methodology from any device with an internet connection, be it tablet, mobile or computer*”

*It delves into the essentials of Control Charting for Variables and Lot-by-Lot Acceptance Sampling by Attributes, with content available 24 hours a day.*

*Achieve professional success in one of the most promising areas of Computational Statistics, thanks to TECH and the most innovative teaching materials.*

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

Its multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

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



# 02 Objectives

The final objective of this Postgraduate Certificate in Six Sigma Methodology is that the student acquires a precise update of his knowledge in this area. An update that will allow the student to work with the highest possible quality and efficiency. All this, thanks to TECH and a 100% online modality that gives total freedom of organization and schedules to the student.



*TECH will provide you with the most cutting-edge and complete information, as well as all the materials you need to achieve even your most ambitious goals"*



### General Objectives

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- ◆ Provide graduates with the latest and most exhaustive information on Computational Statistics, which will help them specialize in the field and reach the highest level of knowledge
- ◆ Provide them with everything necessary to acquire a professional mastery of the main tools used in the field through use cases based on real and frequent situations that arise in the industry



### Specific Objectives

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- ◆ Offer different statistical control tools and continuous quality improvement of the productive processes commonly used in the Six Sigma Methodology
- ◆ Put this knowledge into practice



*Reach your most demanding goals thanks to a dynamic and unique program with the most complete theoretical and practical materials in the academic market"*

03

# Structure and Content

The structure and all the didactic resources of this curriculum have been designed by the renowned professionals that make up TECH's team of experts in this area of engineering. These specialists have used their extensive experience and state-of-the-art knowledge to create practical and completely up-to-date content. All this, based on the most efficient pedagogical methodology, TECH Relearning.

“

*Specialize your knowledge thanks to the most innovative and complete teaching materials on Six Sigma Methodology”*

**Module 1. Six Sigma Methodology for Quality Improvement**

- 1.1. Statistical Quality Assurance
  - 1.1.1. Introduction
  - 1.1.2. Statistical Quality Assurance
- 1.2. Six Sigma Methodology
  - 1.2.1. Quality Standards
  - 1.2.2. Six Sigma Methodology
- 1.3. Control Charts
  - 1.3.1. Introduction
  - 1.3.2. Processes in Statistical Control and Out-of-Control Processes
  - 1.3.3. Control Charts and Hypothesis Testing
  - 1.3.4. Statistical Basis of Control Charts. General Models
  - 1.3.5. Types of Control Charts
- 1.4. Other Basic SPC Tools
  - 1.4.1. Case Study
  - 1.4.2. The Rest of the "Magnificent Seven"
- 1.5. Attribute Control Charts
  - 1.5.1. Introduction
  - 1.5.2. Control Charts for Non-Conforming Fractions
  - 1.5.3. Control Charts for the Number of Non-Conformities
  - 1.5.4. Control Charts for Defects
- 1.6. Control Charts for Variables
  - 1.6.1. Introduction
  - 1.6.2. Mean and Range Control Charts
  - 1.6.3. Control Charts for Individual Units
  - 1.6.4. Control Charts Based on Moving Averages



- 1.7. Lot-By-Lot Acceptance Sampling by Attributes
  - 1.7.1. Introduction
  - 1.7.2. Simple Sampling by Attributes
  - 1.7.3. Double Sampling by Attributes
  - 1.7.4. Multiple Sampling by Attributes
  - 1.7.5. Sequential Sampling
  - 1.7.6. Inspection with Rectification
- 1.8. Process and Measurement System Capability Analysis
  - 1.8.1. Process Capacity Analysis
  - 1.8.2. Capacity Studies of Measuring Systems
- 1.9. Introduction to Taguchi Methods for Process Optimization
  - 1.9.1. Introduction to Taguchi Methods
  - 1.9.2. Quality through Process Optimization
- 1.10. Case Studies
  - 1.10.1. Case Studies for Control Charts for Attributes
  - 1.10.2. Case Studies for Control Charts for Variables
  - 1.10.3. Case Studies for Batch-to-Batch Acceptance Sampling by Attributes
  - 1.10.4. Case Studies for Process Capability and Measurement System Capability Analysis
  - 1.10.5. Case Studies to Introduce Taguchi Methods for Process Optimization

**“** You will be able to implement in your professional practice the most innovative and technical IT strategies for the development of state-of-the-art statistical software of the highest quality level”



# 04 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.*

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

The case method is the most widely used learning system in the best faculties in the world. 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 program, the studies 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

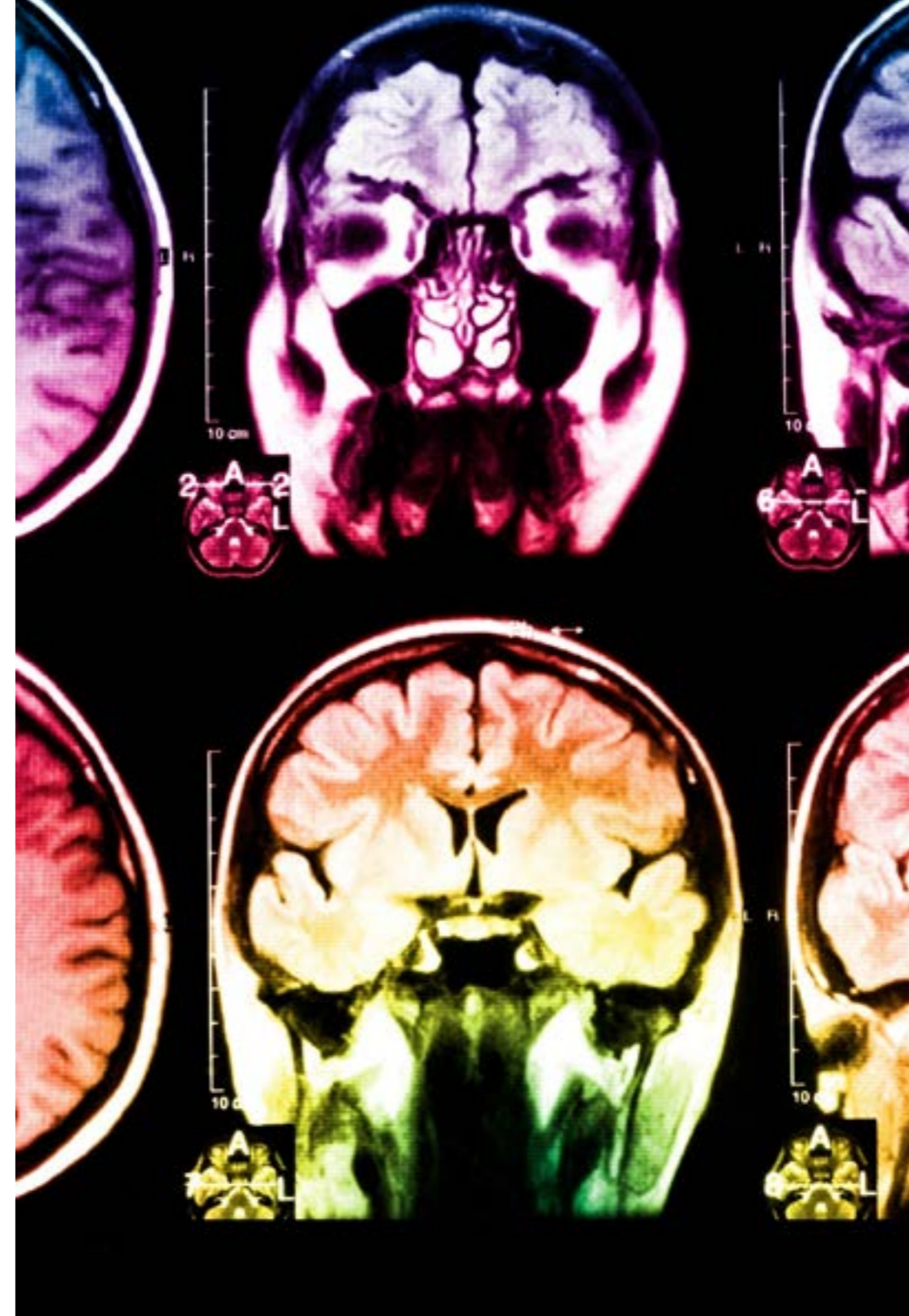
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.



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.

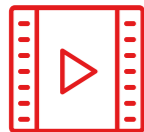
This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this 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.



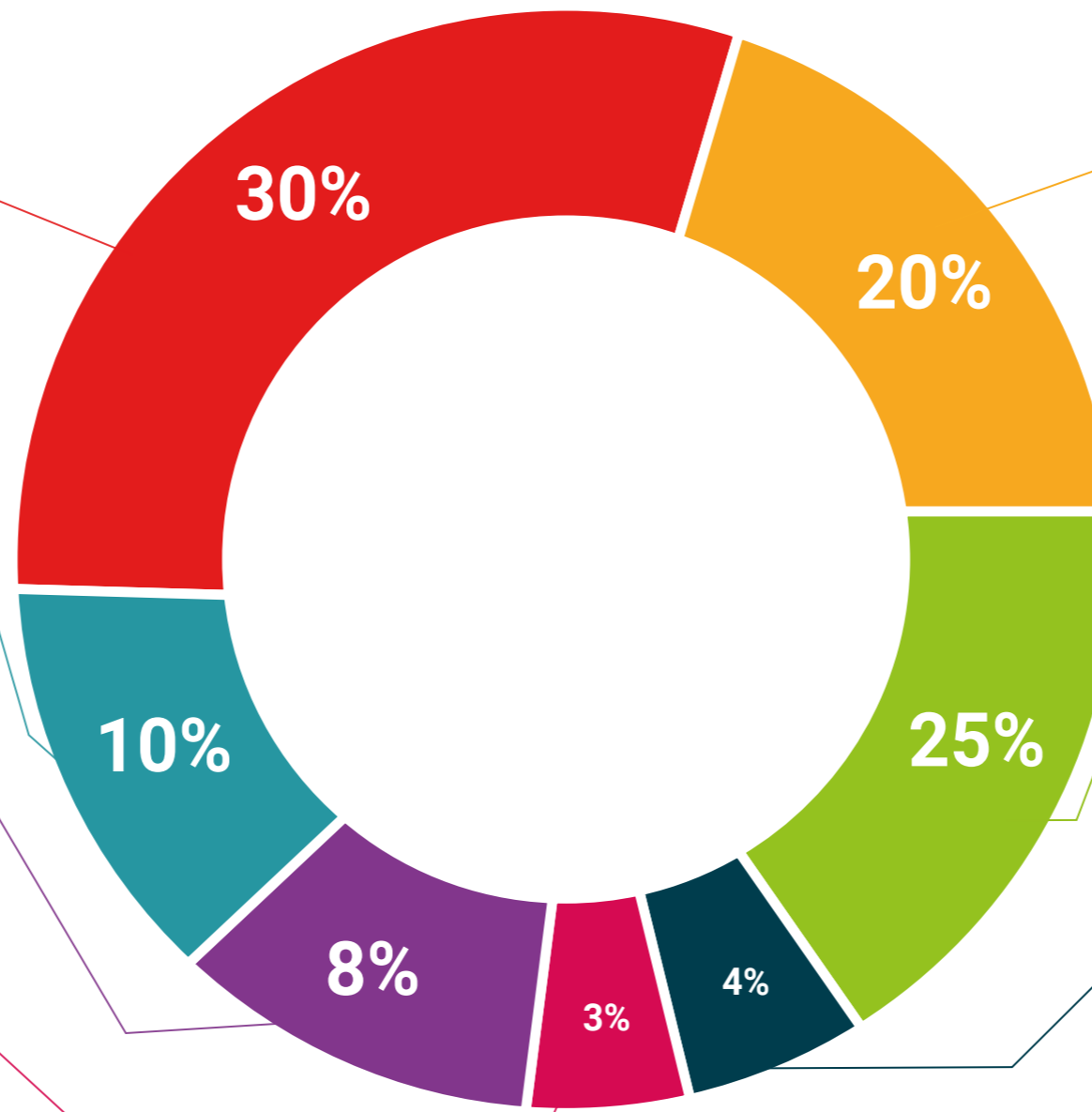
**Practising Skills and Abilities**

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.



**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.



05

# Certificate

The Postgraduate Certificate in Six Sigma Methodology 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 Six Sigma Methodology** 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 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 Six Sigma Methodology**

Official N° of hours: **150 h.**



\*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.



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