

# Postgraduate Certificate Statistics in Industry



## Postgraduate Certificate Statistics in Industry

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

Website: [www.techtitute.com/us/engineering/postgraduate-certificate/statistics-industry](http://www.techtitute.com/us/engineering/postgraduate-certificate/statistics-industry)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Structure and Content

---

*p. 12*

04

Methodology

---

*p. 16*

05

Certificate

---

*p. 24*

# 01

# Introduction

Statistical applications are essential tools in industry, enabling engineers to collect, analyze and present data efficiently. The ability to use statistical applications to solve problems and make informed decisions can be a key factor in a company's success. Engineers who master statistical applications have a competitive advantage because they can use data more effectively to improve processes and products. For this reason, TECH has designed a degree that allows students to maximize their knowledge of aspects such as Queueing Theory, Oriented and Unoriented Graphs or the Critical Path Algorithm, 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 Statistics in Industry, quickly and in a 100% online modality”*

In industry, informed decision making is essential to improve efficiency, reduce costs and increase the quality of products and processes. Engineers able to use statistical tools to analyze data can make informed decisions based on evidence, which has a clear positive impact on the business.

For this reason, TECH has designed a Postgraduate Certificate in Statistics in Industry with the aim of providing 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 Effectiveness Measures, the Poisson Process, the Minimum Weight Covering Tree, Project Management or Probabilistic Inventories will be addressed.

All this, through a convenient 100% online modality that allows students to organize their schedules and studies, combining them with their other day-to-day 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 Statistics in Industry** 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 Statistics in Industry
- ◆ The graphic, schematic and eminently practical contents of the book provide sporting and practical information on those 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



*Become an expert in Statistical Applications in 6 weeks and with total freedom of organization"*

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*Access all the content on Deterministic or Probabilistic Inventories from any device with an internet connection, whether it is a tablet, cell phone or computer”*

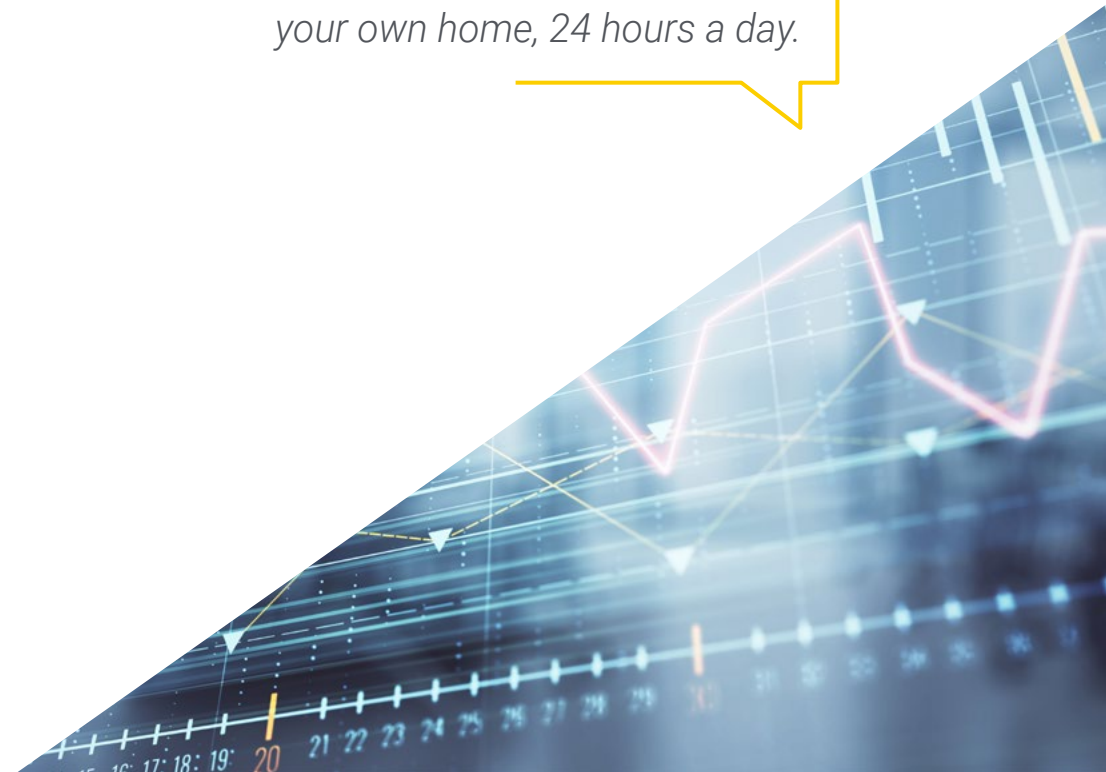
The program's teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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.

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

*Delve into the essentials of the Critical Path Methods, from the comfort of your own home, 24 hours a day.*



# 02

# Objectives

The final objective of this Postgraduate Certificate in Statistics in Industry is that the student acquires a precise update of his knowledge in this area. An update that will allow students to perform their 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, so that he can combine his studies with his other obligations.

A hand is shown pointing towards a digital interface. The interface features a network of blue nodes connected by lines, with some nodes highlighted in orange. Below the network, there are several labels: 'BLOCK\_05' in a pink box, 'NODE\_06' in a pink rounded rectangle, and 'NODE\_09' in a pink rounded rectangle. The background is a mix of blue and brown geometric shapes.

BLOCK\_05

NODE\_06

NODE\_09





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*Deepen in aspects such as Periodic Review and Optimal Order Size, from the tranquility of your home and without the need to travel of any kind”*



## 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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- ◆ Apply and understand queuing theory
- ◆ Study deterministic and random models for decision-making in real projects and inventory planning systems
- ◆ Learn and understand statistical techniques for project management in Pert and CPM
- ◆ Identify common inventory models, analyze them and interpret the results

“

*Reach your most demanding goals thanks to a 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.



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*Thanks to the most efficient teaching methodology, TECH Relearning, you will be able to acquire new knowledge in a precise and natural way, without spending too much time studying”*

## Module 1. Statistical Applications in Industry

- 1.1. Queuing Theory
  - 1.1.1. Introduction
  - 1.1.2. Queuing Systems
  - 1.1.3. Measures of Effectiveness
  - 1.1.4. Poisson Processes
  - 1.1.5. Exponential Distributions
  - 1.1.6. Birth and Death Processes
  - 1.1.7. Queuing Models with One Server
  - 1.1.8. Models with Multiple Servers
  - 1.1.9. Capacity-Limited Queuing Models
  - 1.1.10. Finite Source Models
  - 1.1.11. General Models
- 1.2. Introduction to Graph Theory (Graphs)
  - 1.2.1. Basic Concepts
  - 1.2.2. Oriented and Non-Oriented Graphs
  - 1.2.3. Array Representations: Adjacency and Incidence Arrays
- 1.3. Graph Applications
  - 1.3.1. Trees: Properties
  - 1.3.2. Rooted Trees
  - 1.3.3. Deep Search Algorithm
  - 1.3.4. Application to Block Determination
  - 1.3.5. Wide Search Algorithm
  - 1.3.6. Minimum Weight Overlay Tree
- 1.4. Paths and Distances
  - 1.4.1. Distance in Graphs
  - 1.4.2. Critical Path Algorithm



- 1.5. Maximum Flow
  - 1.5.1. Transport Networks
  - 1.5.2. Minimum Cost Flow Distribution
- 1.6. Program Evaluation and Review Technique (PERT)
  - 1.6.1. Definition
  - 1.6.2. Method
  - 1.6.3. Applications
- 1.7. Critical Path Method (CPM)
  - 1.7.1. Definition
  - 1.7.2. Method
  - 1.7.3. Applications
- 1.8. Project Management
  - 1.8.1. Differences and Advantages between PERT and CPM Methods
  - 1.8.2. Procedure to Draw Network Models
  - 1.8.3. Applications with Random Durations
- 1.9. Deterministic Inventories
  - 1.9.1. Costs Associated with Flows
  - 1.9.2. Costs Associated with Stocks or Storage
  - 1.9.3. Costs Associated with Processes. Replenishment Planning
  - 1.9.4. Inventory Management Models
- 1.10. Probabilistic Inventories
  - 1.10.1. Service Level and Safety Stock
  - 1.10.2. Optimal Order Size
  - 1.10.3. One Period
  - 1.10.4. Several Periods
  - 1.10.5. Continuous Review
  - 1.10.6. Periodic Review

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.

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





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

This **Postgraduate Certificate in Statistics in Industry** 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 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 Statistics in Industry**

Official N° of hours: **150 h.**



\*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.

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



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