

Postgraduate Certificate Estimation II



Postgraduate Certificate Estimation II

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

Website: www.techtitute.com/in/engineering/postgraduate-certificate/estimation-ii

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

Estimation is a fundamental topic in data analysis, and its application in engineering is increasingly relevant in today's environment. Therefore, this program offers specialized teaching in the different techniques and methods used in parameter estimation, providing engineers with the necessary skills to analyze and make informed decisions. In this sense, the engineer will delve into topics such as statistical inference, interval estimation and procedures for the construction of estimators, among others. In addition, the program is developed in a 100% online format, which allows students to access the contents from anywhere and at any time. It also uses the Relearning methodology, which will allow graduates to receive personalized education adapted to their needs.





“

Thanks to this exclusive qualification you will be able to delve deeper into the procedures for the construction of estimators with a 100% online program”

The ability to estimate accurately is essential for any engineer seeking to develop successful projects. Today, engineering is a discipline that benefits greatly from data analysis and statistics, and estimation has become a key tool for informed decision making.

For this reason, TECH presents the Postgraduate Certificate in Estimation II for Predesign and Analysis that provides engineers with the skills and tools necessary to estimate key parameters in project design and analysis, allowing them to make informed and accurate decisions. The program is adapted to the current needs of the market, and its content focuses on statistical inference, point and interval estimation, and procedures for the construction of estimators.

Therefore, this program is developed in a 100% online format, which allows students to access the study from anywhere and at any time, which is very convenient for those engineers who wish to continue with their instruction without leaving their work or personal life. In addition, the Relearning methodology used in the program guarantees a personalized education adapted to the needs of each graduate, allowing them to learn in an effective and efficient way.

This **Postgraduate Certificate in Estimation II** 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 eminently practical contents with which it is conceived provide sporting and practical information on those disciplines that are essential for professional practice
- ◆ Practical exercises where the self-assessment process can be carried out 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



A qualification with which you will acquire an exhaustive mastery of goodness-of-fit testing, typical of the best experts”

“*Motivational videos, case studies, graphic and schematic content, discussion forums Everything you need to take a leap forward in your career. Don't wait any longer”*

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.

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 education programmed to learn 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.

With the Relearning methodology you will acquire the knowledge in a progressive way and with total flexibility. A program that fits you.

Combine your personal and work responsibilities with your studies thanks to this Postgraduate Certificate. 100% flexible and online.



02

Objectives

The final objective of this Postgraduate Certificate in Estimation II is for the student to acquire new skills and competencies in this area. In this way, they will obtain an up-to-date knowledge that will allow the engineering professional 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, being able to distribute the teaching load according to their needs and other obligations.



“

Specialize in Bayesian estimation and make an effective comparison with classical methods”



General Objectives

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





Specific Objectives

- ◆ Become familiar with the methods of statistical inference: contrast of hypotheses
- ◆ Choose and use the most appropriate estimation method in an investigation according to the objectives of the investigation

“

You will achieve your objectives thanks to the solid knowledge you will acquire in non-parametric statistical inference with this Postgraduate Certificate”

03

Structure and Content

A group of specialists in Estimation has developed the syllabus for this program, which includes 150 hours of theoretical, practical and complementary material in various audiovisual formats. In addition, TECH's methodology, called Relearning, will provide a natural and progressive learning experience in statistics for the student. All this is presented in a flexible online format, allowing the student to access the most advanced tools from any device connected to the Internet and access the Virtual Campus 24 hours a day.





01

In vulputate neque fringilla urna cursus feugiat. Mauris ullamcorper nulla non ex dictum, id venenatis velit faucibus. Sed quis lectus leo.

“

An expertly designed syllabus and quality content are the key to your learning success”

Module 1. Estimation II

- 1.1. Introduction to Hypothesis Contrasting
 - 1.1.1. Problem Statement
 - 1.1.2. Null and Alternative Hypothesis
 - 1.1.3. Contrast Statistics
 - 1.1.4. Types of Error
 - 1.1.5. Level of Significance
 - 1.1.6. Critical Region, p-value
 - 1.1.7. Power
- 1.2. Types of Hypothesis Contrasting
 - 1.2.1. Likelihood Ratio Test
 - 1.2.2. Contrasts on Means and Variances in Normal Populations
 - 1.2.3. Contrasts on Proportions
 - 1.2.4. Relationship between Confidence Intervals and Hypothesis Contrasting
- 1.3. Introduction to Bayesian Inference
 - 1.3.1. A Priori Distributions
 - 1.3.2. Conjugate Distributions
 - 1.3.3. Reference Distributions
- 1.4. Bayesian Estimation
 - 1.4.1. Point Estimation
 - 1.4.2. Estimation of an Proportion
 - 1.4.3. Mean Estimate in Normal Populations
 - 1.4.4. Comparison to Classical Methods
- 1.5. Introduction to Non-Parametric Inference Statistics
 - 1.5.1. Non-Parametric Statistical Methods: Concepts
 - 1.5.2. Use of Non-Parametric Statistics



- 1.6. Non-Parametric Inference Compared to Parametric Inference
 - 1.6.1. Differences between Inferences
- 1.7. Goodness-of-Fit Test
 - 1.7.1. Introduction
 - 1.7.2. Graphic Methods
 - 1.7.3. Contrast of the Goodness-of-Fit Equation
 - 1.7.4. Kolmogorov-Smirnov Test
 - 1.7.5. Normality Contrasts
- 1.8. Independence Contrasts
 - 1.8.1. Introduction
 - 1.8.2. Randomness Contrasts. Contrast of Spurts
 - 1.8.3. Independence Contrasts in Paired Samples
 - 1.8.3.1. Kendall's Contrast
 - 1.8.3.2. Spearman's Ranks Contrast
 - 1.8.3.3. Independence Chi-Square Test
 - 1.8.3.4. Generalization of the Chi-Square Contrast
 - 1.8.4. Independence Contrasts in K Related Samples
 - 1.8.4.1. Generalization of the Chi-Square Contrast
 - 1.8.4.2. Kendall's Coefficient of Concordance
- 1.9. Position Contrast
 - 1.9.1. Introduction
 - 1.9.2. Position Contrasts for a Single Sample and Paired Samples
 - 1.9.2.1. Sign Test for a Single Sample. Median Test
 - 1.9.2.2. Sign Test for Paired Samples
 - 1.9.2.3. Wilcoxon Signed-Rank Test for a Single Sample
 - 1.9.2.4. Wilcoxon Signed-Rank Test for Paired Samples
 - 1.9.3. Non-Parametric Contrasts for Two Independent Samples
 - 1.9.3.1. Wilcoxon-Mann-Whitney's Test
 - 1.9.3.2. Median Test
 - 1.9.3.3. Chi-Square Contrast
 - 1.9.4. Position Contrasts for K Independent Samples
 - 1.9.4.1. Kruskal-Wallis Test
 - 1.9.5. Independence Contrasts in K Related Samples
 - 1.9.6. Friedman's Test
 - 1.9.7. Cochran Q Test
 - 1.9.8. Kendall W Test
- 1.10. Homogeneity Contrast
 - 1.10.1. Homogeneity Contrasts for Two Independent Samples
 - 1.10.1.1. Wald-Wolfowitz Contrast
 - 1.10.1.2. Kolmogorov-Smirnov Test
 - 1.10.1.3. Chi-Square Contrast



You will learn, through collaborative activities and real cases, the resolution of complex situations in real business environments”

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.





“

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 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 Estimation II 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 Estimation II** 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 Estimation II**

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.

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



Postgraduate Certificate Estimation II

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

Postgraduate Certificate Estimation II