Postgraduate Diploma
Statistical Studies

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Postgraduate Diploma
Statistical Studies

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

Website: **www.techtitute.com/in/engineering/postgraduate-diploma/postgraduate-diploma-statistical-studies**

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01

Introduction

Statistics is one of the most complete disciplines in the Social Sciences sector based on the multiple applications it can have: to establish diagnostic criteria in Medicine, to predict voting trends in elections,to plan marketing strategies, etc. Through exploration and the acquisitionof real information based on the objects under study, it is possible to arrive to a reliable representation of a predefined context, expanding a certain project's possibilities success . This is the perfect option for graduates interested in this field and looking for aprogram that gives them everything they need to know to master it. Also, it is developed in a 100% online comfortable format.

The best program on the current educational scene to delve into sample design and the application of Statistical Studies to industry, 100% online”

The use of Statistics as an indispensable tool of Medicine has allowed the development of more effective and exhaustive guidelines for action and management of patients based on the number of cases in which the same symptomatic picture is repeated as well as the results obtained after the establishment of specific treatment. The same happens in areas such as politics, economics or Marketing, in which this discipline and its use to calculate future trends based on the analysis of social behaviors that have been carried out so far after a certain activity (some elections, the launch of a product, the rise in the value of shares, etc.) is very frequent, as well as effective, efficient and, above all, necessary.

For this reason, it is a sector with a wide job opportunity, in which professionals find a vast range of opportunities to develop and grow with demanding and top-level expectations for the future.Based on this, the program of this Postgraduate Diploma is, therefore, a unique educational opportunity to specialize in Statistical Studies and to acquire the most exhaustive knowledge about the analysis, exploration, management and handling of data. Across 450 hours of the best theoretical, practical and additional content, graduates will work with the most innovative information related to sample designs and the different applications of Statistics to the current industry, and will be able to implement the most effective, up-to-date sampling and estimation techniques in their praxis.

All of the above in a 100% online format and across 6 months in which you will have unlimited access to the Virtual Campus, which is compatible with all devices with an internet connection. In addition, you will have hours of high-quality additional material presented in different formats: in-depth videos, research articles, additional reading, self-discovery exercises, dynamic summaries and much more! Everything can be downloaded for your consultation, even when you do not have coverage, and by the time you have finished with this unique and highly empowering academic experience.

This **Postgraduate Diploma in Statistical Studies** 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 Statistical Studies
- The graphic, schematic and practical contents of the book provide technical 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 for 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

You will acquire a broad and exhaustive knowledge about one-dimensional descriptive statistics, as well as its form characteristics and its standardized scores"

You will be able to work with general considerations about sampling in small and large-scale projects, based on the type of study and the applications it will have"

TECH's Online Campus is compatible with any device with an Internet connection, so you can log in from anywhere, without limits or schedules.

Would you like to master the rules of simple random sampling and probability sampling? Choose a program that allows you to carry it out with guaranteed quality while also reaching the highest level.

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. This will be done with the help of an innovative system of interactive videos made by renowned experts.

02

Objectives

The development of this Postgraduate Diploma has been carried out so that graduates can access the most avant-garde theoretical, practical and additional content that allows them to specialize, in just 6 months, in Statistical Studies and its multiple possibilities. Thanks to the highly demanding curriculum with which the program has been created, any professional will be able to achieve even their highest goals through a program that is tailored to their needs and presented in a convenient and accessible 100% online format.

Are you looking for a program that introduces you to graphs and allows you to learn about their many applications? If the answer is yes, this Postgraduate Diploma is perfect for you"

General Objectives

- Develop broad and specialized knowledge about the different applications of Statistical Studies in today's industry
- Know the most effective and avant-garde sample design techniques in the statistical sector in detail
- Dig into the exploration and description of data as the basis of Statistical Studies

You will work intensely on perfecting your professional skills, such as exploratory analysis or linear regression through curves"

Specific Objectives

Module 1. Data Description and Exploration

- Know the descriptive and exploratory techniques to summarize information contained in experimental data sets
- Represent univariate and bivariate data sets graphically and numerically
- Interpret results and graphs in the context of the data
- Use statistical software to manipulate data, perform descriptive analysis and graphs

Module 2. Sampling Designs

- Introduction to basic sampling plans
- Acquire the conceptual and practical fundamentals to conduct the various sampling procedures presented
- Acquire the ability to apply the most appropriate method in each practical case

Module 3. Statistical Applications in Industry

- 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

03

Structure and Content

This Postgraduate Diploma in Statistical Studies has been developed by TECH taking into account 3 main criteria: the recommendations of a team of professionals versed in the area of economics and finance, the methodology Relearning and the inclusion of the most varied, dynamic and exhaustive additional material The above has made it possible to create a complete and highly capacitating professional experience condensed in 450 hours, presented in a convenient and accessible 100% online format. In this way, graduates will define their own study schedule as well as the depth with which they wish to delve into each section.

You will find detailed videos, research articles, complementary readings and much more in the Virtual CAMPUS! So you can personalize your study of the different sections of the syllabus"

Module 1. Data Description and Exploration

1.1. Introduction to Statistics
- 1.1.1. Basic Concepts in Statistics
- 1.1.2. The Purpose of Exploratory Data Analysis or Descriptive Statistics
- 1.1.3. Types of Variables and Measurement Scales
- 1.1.4. Rounding and Scientific Notation

1.2. Summary of Statistical Data
- 1.2.1. Frequency Distributions: Tables
- 1.2.2. Grouping in Intervals
- 1.2.3. Graphical Representations
- 1.2.4. Differential Diagram
- 1.2.5. Integral Diagram

1.3. One-Dimensional Descriptive Statistics
- 1.3.1. Central Position Characteristics: Mean, Median, Mode
- 1.3.2. Other Position Characteristics: Quartiles, Deciles and Percentiles
- 1.3.3. Dispersion Characteristics: Variance and Standard Deviation (Sample and Population), Range, Inter-Quartile Range
- 1.3.4. Relative Dispersion Characteristics
- 1.3.5. Typical Scores
- 1.3.6. Shape Characteristics: Symmetry and Kurtosis

1.4. Complements in the Study of a Variable
- 1.4.1. Exploratory Analysis: Box Plots and Other Graphs
- 1.4.2. Transforming Variables
- 1.4.3. Other Averages: Geometric, Harmonic, Quadratic
- 1.4.4. Chebyshev's Inequality

1.5. Two-Dimensional Descriptive Statistics
- 1.5.1. Two-Dimensional Frequency Distributions
- 1.5.2. Double-Entry Statistical Tables. Marginal and Conditional Distributions
- 1.5.3. Concepts of Independence and Functional Dependence
- 1.5.4. Graphical Representations

1.6. Complements in the Study of Two Variables
- 1.6.1. Numerical Characteristics of a Two-Dimensional Distribution
- 1.6.2. Joint, Marginal and Conditional Moments
- 1.6.3. Relationship between Marginal and Conditional Measures

1.7. Regression
- 1.7.1. General Regression Line
- 1.7.2. Regression Curves
- 1.7.3. Linear Adjustment
- 1.7.4. Prediction and Error

1.8. Correlation
- 1.8.1. Concept of Correlation
- 1.8.2. Correlation Ratios
- 1.8.3. Pearson's Correlation Coefficient
- 1.8.4. Correlation Analysis

1.9. Correlation between Attributes
- 1.9.1. Spearman's Coefficient
- 1.9.2. Kendall Coefficient
- 1.9.3. Chi-Squared Coefficient

1.10. Introduction to Time Series
- 1.10.1. Time Series
- 1.10.2. Stochastic Processes
  - 1.10.2.1. Stationary Processes
  - 1.10.2.2. Non-Stationary Processes
- 1.10.3. Models
- 1.10.4. Applications

Module 2. Sampling Designs

2.1. General Considerations on Sampling
- 2.1.1. Introduction
- 2.1.2. Historical Background
- 2.1.3. Concept of Population, Frame and Sample
- 2.1.4. Advantages and Disadvantages of Sampling
- 2.1.5. Stages in a Sampling Process
- 2.1.6. Sampling Applications
- 2.1.7. Types of Sampling
- 2.1.8. Sampling Designs

2.2. Simple Random Sampling
- 2.2.1. Introduction
- 2.2.2. Definition of Sample Design MAS (N, n), MASR and Associated Parameters
- 2.2.3. Estimation of Population Parameters
- 2.2.4. Determining Sample Sizes (without Replenishment)
- 2.2.5. Determining Sample Sizes (with Replenishment)
- 2.2.6. Comparison between Simple Random Sampling without and with Replacement
- 2.2.7. Estimating Subpopulations

2.3. Probability Sampling
- 2.3.1. Introduction
- 2.3.2. Sampling Design or Procedure
- 2.3.3. Statistics, Estimators and Properties
- 2.3.4. Estimator Distribution in Sampling
- 2.3.5. Selecting Units without and with Replenishment. Equal Probabilities
- 2.3.6. Simultaneous Variable Estimation

2.4. Probability Sampling Applications
- 2.4.1. Main Applications
- 2.4.2. Examples:

2.5. Stratified Random Sampling
- 2.5.1. Introduction
- 2.5.2. Definition and Characteristics
- 2.5.3. Estimators under M.A.E(n)
- 2.5.4. Bindings
- 2.5.5. Determining Sample Size
- 2.5.6. Other M.A.E Aspects

2.6. Stratified Random Sampling Applications
- 2.6.1. Main Applications
- 2.6.2. Examples:

2.7. Systematic Sampling
- 2.7.1. Introduction
- 2.7.2. Estimates in Systematic Sampling
- 2.7.3. Variance Decomposition in Systematic Sampling
- 2.7.4. Efficiency of Systematic Sampling Compared to MAS
- 2.7.5. Variance Estimation: Replicate or Interpenetrating Samples

2.8. Systematic Sampling Applications
- 2.8.1. Main Applications
- 2.8.2. Examples:

2.9. Indirect Estimation Methods
- 2.9.1. Ratio Methods
- 2.9.2. Regression Methods

2.10. Indirect Estimation Methods Applications
- 2.10.1. Main Applications
- 2.10.2. Examples:

Module 3. Statistical Applications in Industry

3.1. Queuing Theory
- 3.1.1. Introduction
- 3.1.2. Queuing Systems
- 3.1.3. Measures of Effectiveness
- 3.1.4. Poisson Processes
- 3.1.5. Exponential Distributions
- 3.1.6. Birth and Death Processes
- 3.1.7. Queuing Models with One Server
- 3.1.8. Models with Multiple Servers
- 3.1.9. Capacity-Limited Queuing Models
- 3.1.10. Finite Source Models
- 3.1.11. General Models

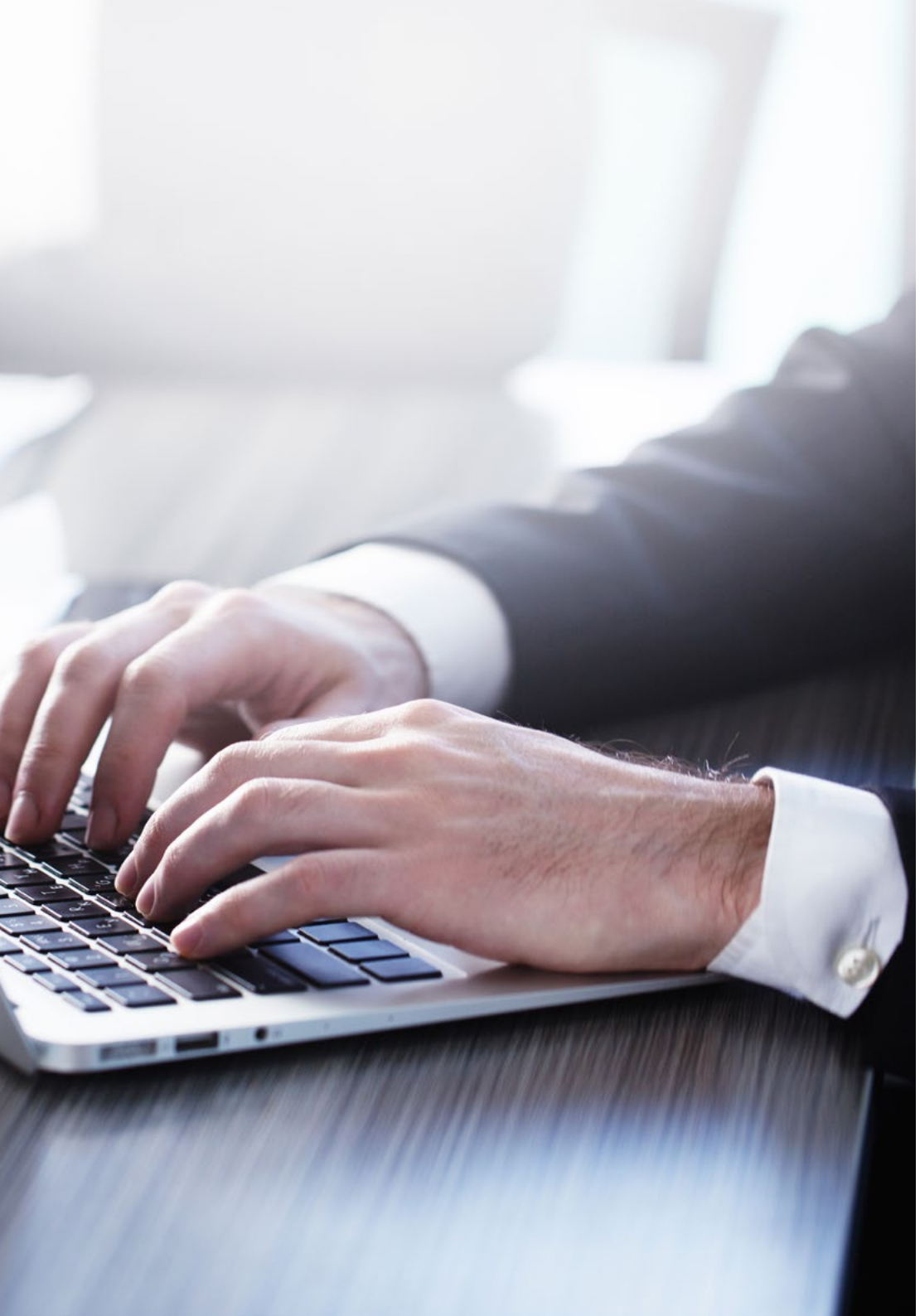
3.2. Introduction to Graph Theory (Graphs)
- 3.2.1. Basic Concepts
- 3.2.2. Oriented and Non-Oriented Graphs
- 3.2.3. Array Representations: Adjacency and Incidence Arrays

3.3. Graph Applications
- 3.3.1. Trees: Properties
- 3.3.2. Rooted Trees
- 3.3.3. Deep Search Algorithm
- 3.3.4. Application to Block Determination
- 3.3.5. Wide Search Algorithm
- 3.3.6. Minimum Weight Overlay Tree

3.4. Paths and Distances
- 3.4.1. Distance in Graphs
- 3.4.2. Critical Path Algorithm

3.5. Maximum Flow
- 3.5.1. Transport Networks
- 3.5.2. Minimum Cost Flow Distribution

3.6. Program Evaluation and Review Technique (PERT)
- 3.6.1. Definition
- 3.6.2. Method
- 3.6.3. Applications



3.7. Critical Path Method (CPM)
- 3.7.1. Definition
- 3.7.2. Method
- 3.7.3. Applications

3.8. Project Management
- 3.8.1. Differences and Advantages between PERT and CPM Methods
- 3.8.2. Procedure to Draw Network Models
- 3.8.3. Applications with Random Durations

3.9. Deterministic Inventories
- 3.9.1. Costs Associated with Flows
- 3.9.2. Costs Associated with Stocks or Storage
- 3.9.3. Costs Associated with Processes. Replenishment Planning
- 3.9.4. Inventory Management Models

3.10. Probabilistic Inventories
- 3.10.1. Service Level and Safety Stock
- 3.10.2. Optimal Order Size
- 3.10.3. One Period
- 3.10.4. Several Periods
- 3.10.5. Continuous Review
- 3.10.6. Periodic Review

Specializing in the field of Statistical Studies with TECH will not only open the doors to an extensive labor market, but it will also place you at the top of the sector thanks to the high level of professionalism that you will acquire"

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

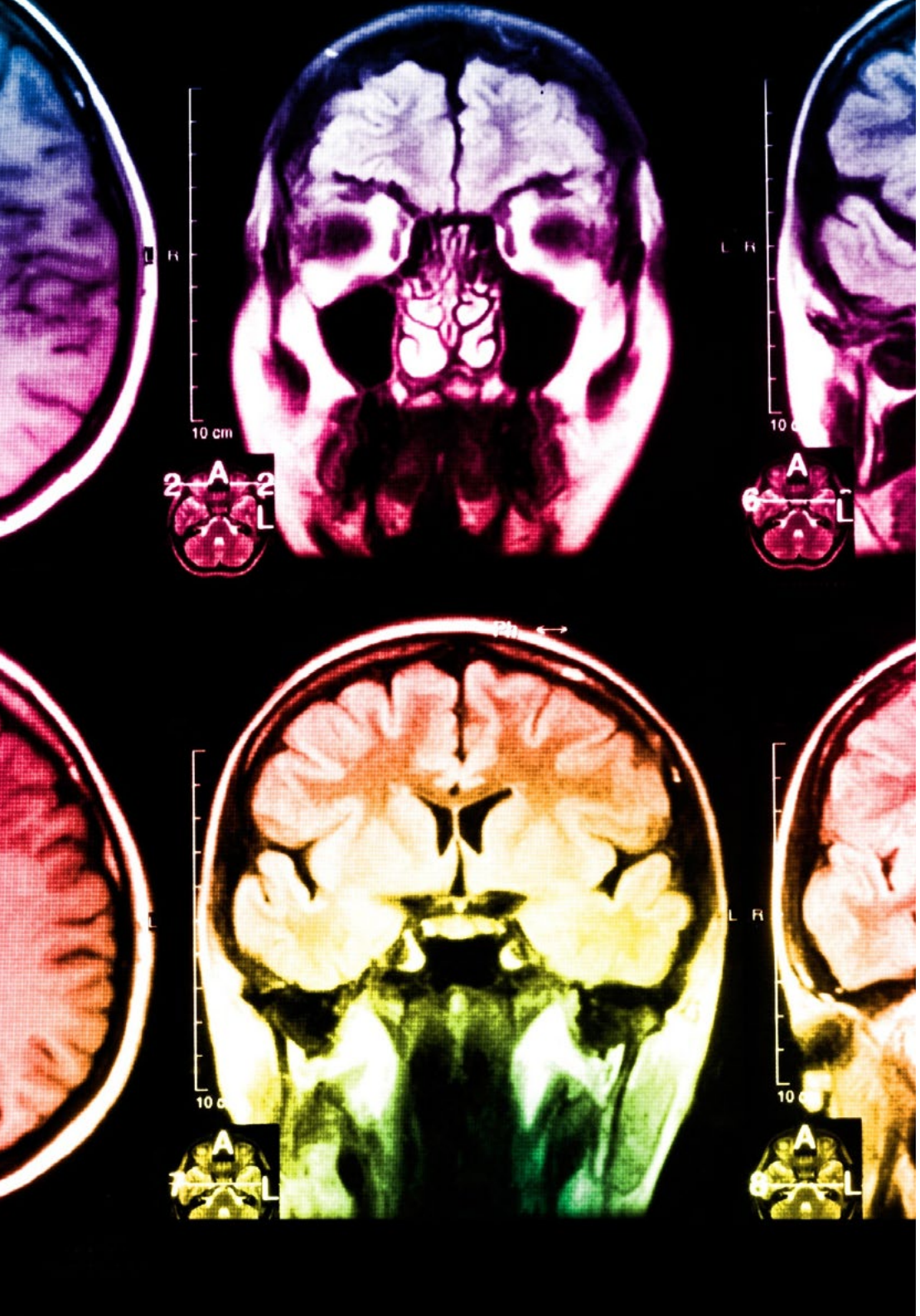
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

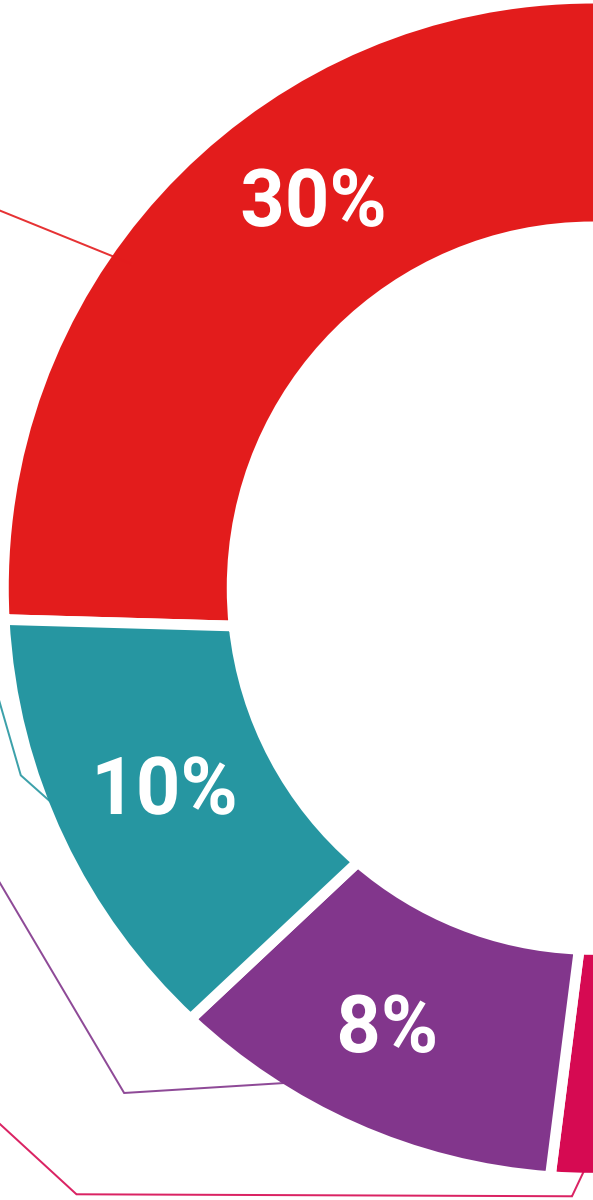
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

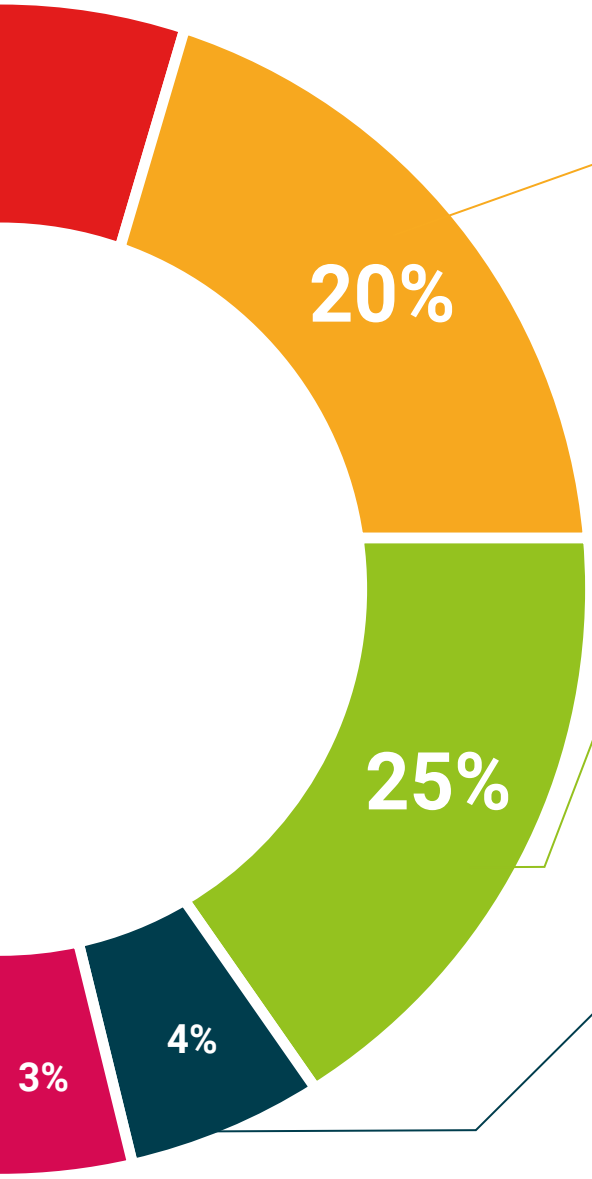
Practising Skills and Abilities

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

This Postgraduate Diploma in Statistical Studies guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in Statistical Studies** 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 Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Statistical Studies**

Official Nº of Hours: **450 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Statistical Studies

This is a qualification awarded by this University, equivalent to 450 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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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