Postgraduate Certificate
Data Description
and Exploration

tech global university

Postgraduate Certificate
Data Description and Exploration

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Global University**
- » Credits: **6 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/engineering/postgraduate-certificate/data-description-exploration**

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01

Introduction

Data is the basis for decision making in engineering and proper data analysis can provide valuable information to solve problems and improve processes. The ability to describe and explore data allows engineers to identify patterns, trends and anomalies, which can lead to a deeper understanding of the problem at hand. For this reason, TECH has designed a degree that allows students to maximize their knowledge of aspects such as the Integral Diagram, Graphical Representations or Pearson's Correlation Coefficient, among others. All this, thanks to a 100% online modality and with the most dynamic and practical multimedia materials available in the academic market.

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

The ability to create clear and effective visualizations can help professionals in this area convey their findings in a clear and concise manner, which can be crucial for decision making. Data Description and Data Exploration are essential skills for an engineer, as they enable them to identify patterns and trends, ensure data quality, and communicate the results of analysis effectively effectively.

Due to this, TECH has designed a Postgraduate Certificate in Data Description and Exploration with which it seeks to provide students with the skills and competencies necessary to perform their work as specialists with the highest quality in their work. Thus, throughout this program, aspects such as the Summary of Statistical Data, Unidimensional Descriptive Statistics, the Transformation of Variables or the Types of Variables and Scales of Measurement will be addressed.

And all this, thanks to a convenient 100% online mode that allows students to organize their studies as best suits them, combining them with their other occupations. 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 Data Description and Exploration** 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 Data Description and Exploration
- 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 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

Reach your maximum potential as an expert in Statistics, thanks to a complete program with the most challenging practical activities"

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

Access all the content on One-Dimensional Descriptive Statistics from any device with internet connection, whether Tablet, mobile or computer.

Delve into the essentials of Data Description and Exploration, from the comfort of your home, 24 hours a day.

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.

02
Objectives

The objectives of this Postgradaute Certificate in Data Description and Exploration are for the student to acquire new and improved skills 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.

" It deepens in aspects such as Regression and Correlation between Attributes, from the tranquility of your home and without the need of any kind of displacements"

General Objectives

◆ 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

Exceed your highest expectations, thanks to a unique program with the most complete theoretical and practical materials in the academic market on Stationary and Non-Stationary Processes"

Specific Objectives

- 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

Structure and Content

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

"

Deepen your knowledge, thanks to the most innovative teaching materials and a wide variety of additional content available on the Online Campus"

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. Sperman'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

"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"

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.

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.

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

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

30%

10%

8%

20%

25%

4%

3%

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 Data Description and Exploration 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 program will allow you to obtain your **Postgraduate Certificate in Data Description and Exploration** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.
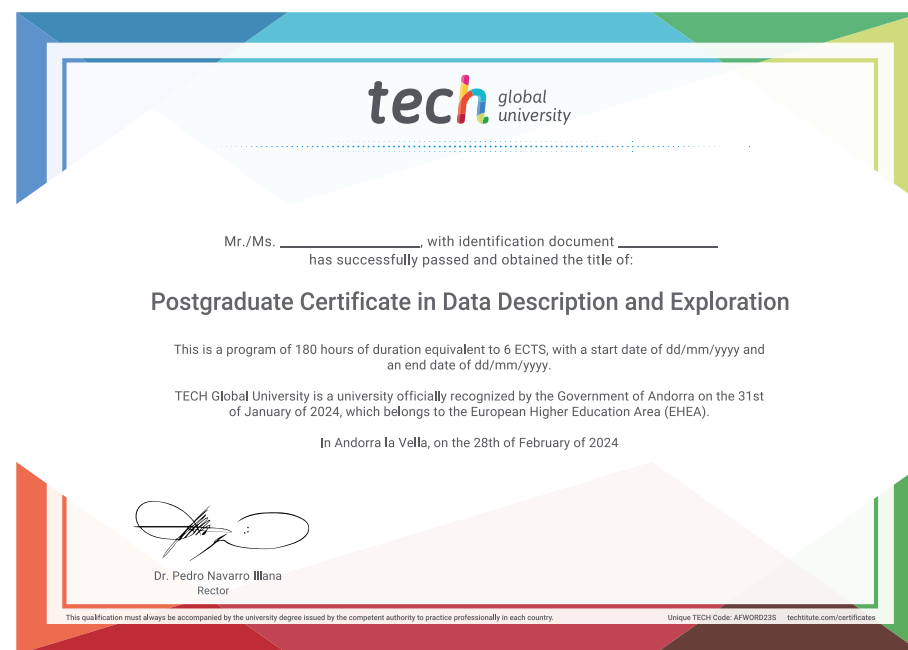
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Data Description and Exploration**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

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Mr./Ms. _____, with identification document _____ has successfully passed and obtained the title of:

Postgraduate Certificate in Data Description and Exploration

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

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

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

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