

Postgraduate Certificate

Statistics Applied to Performance and Research

Endorsed by the



tech  universidad
tecnológica



Postgraduate Certificate

Statistics Applied to Performance and Research

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

Website: www.techtitute.com/pk/postgraduate-certificate-in-statistics-applied-to-performance-and-research

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 20

06

Certificate

p. 28

01 Introduction

The Postgraduate Certificate in Statistics Applied to Performance and Research aims to establish a solid knowledge base by developing the necessary competencies in the field of statistics, to carry out data analysis and to understand research results.





“

The most up-to-date academic training provided by outstanding teachers experienced in the world of sports and academics”

In this Postgraduate Certificate you will find detailed information on key aspects of sports performance, treated with a unique didactic and depth in the current academic offer.

Each module will be taught by true specialists in the field, which guarantees the highest level of knowledge in the subject. The program starts with notions of probability and probability distributions, the basis of statistics, to move on to statistical inference and from there to more complex models of data analysis and exploration. In this sense, the approach to be used, that of statistical inference, aims to strengthen the concepts of estimators and probability distributions since the fundamental objective of statistical theory is to investigate the possibility of drawing valid inferences from statistical data.

This Postgraduate Certificate in Statistics Applied to Performance and Research will provide students with theoretical contents of the highest quality and depth. One of the characteristics that differentiate this Diploma from others is the relationship between the different topics of the program at a theoretical level but, above all, at a practical level, making the student obtain real examples of teams and athletes of the highest sports performance worldwide, as well as from the professional world of sports, resulting in the student being able to build knowledge in the most complete way.

Another strong point of this Postgraduate Certificate in Statistics Applied to Performance and Research is the training of students in the use of new technologies applied to Sports Performance. The student will not only learn about new technology in the field of performance, but will learn how to use it and, more importantly, how to interpret the data provided by each device to make better decisions regarding training programming.

The teaching team of this Postgraduate Certificate in Statistics Applied to Performance and Research has made a careful selection of each of the topics of this training to offer the student a study opportunity as complete as possible and always linked to current events.

Therefore, at TECH we have set out to create contents of the highest teaching and educational quality that will turn our students into successful professionals, following the highest quality standards in teaching at an international level. Therefore, we show you this Postgraduate Certificate with a rich content that will help you reach the elite of High Performance Sports. In addition, as it is an online course, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

This **Postgraduate Certificate in Statistics Applied to Performance and Research** contains the most complete and up-to-date scientific program on the market. The most important features of the program include

- ♦ The development of numerous case studies presented by specialists in High Performance in Sports training
- ♦ The graphic, schematic and practical contents of the course are designed to provide all the essential information required for professional practice.
- ♦ Exercises where the self-assessment process can be carried out to improve learning.
- ♦ Algorithm-based interactive learning system for decision making.
- ♦ Special emphasis on innovative methodologies in personal training
- ♦ 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



Immerse yourself in the study of this high level course and improve your skills in High Performance Sports".

“

This Postgraduate Certificate is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge as a personal trainer, you will obtain a certificate from one the leading online universities in the world: TECH"

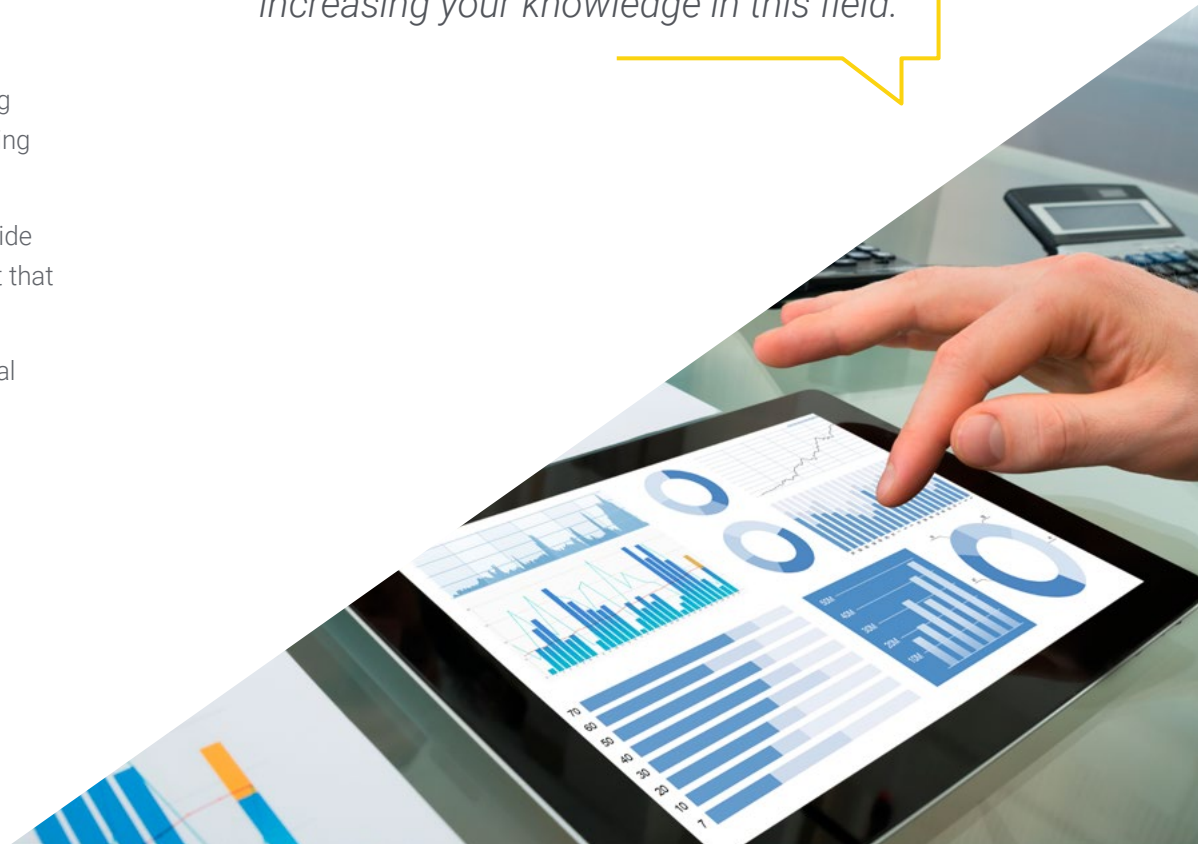
The teaching staff includes professionals from the field of sports science, who bring their experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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 professional will be assisted by an innovative interactive video system created by renowned, and experienced experts in High Performance in Sports with extensive experience.

This course allows training in simulated environments, which provide immersive learning programmed to train for real situations.

This 100% online Postgraduate Certificate will allow you to balance your studies with your professional work while increasing your knowledge in this field.



02

The main objective of this program is to conduct theoretical and practical learning, so that the sports science professional can master in a practical and rigorous way the novelties in High Performance in Sports.



“

Our goal is to achieve academic excellence and help you achieve professional success. Don't hesitate any longer and join us”



General Objectives

- ♦ Master and apply with certainty the most current training methods to improve sports performance
- ♦ To effectively master statistics and thus be able to make a correct use of the data obtained from the athlete, as well as to initiate research processes
- ♦ Acquire knowledge based on the most current scientific evidence with full applicability in the practical field
- ♦ To master all the most advanced methods of sports performance evaluation
- ♦ Master the principles governing Exercise Physiology, as well as Biochemistry
- ♦ Master the principles governing Biomechanics applied directly to Sports Performance
- ♦ Master the principles governing Nutrition applied to sports performance
- ♦ Successfully integrate all the knowledge acquired in the different modules in real practice





Specific Objectives

- ♦ Develop the ability to analyze data collected in the laboratory and in the field through various assessment tools
- ♦ Describe the different types of statistical analysis and their application in various situations for the understanding of phenomena that occur during training
- ♦ Develop strategies for data exploration to determine the best models to describe them
- ♦ Establish the generalities of predictive models through regression analysis that favor the incorporation of different units of analysis in the training field
- ♦ Generate the conditions for the correct interpretation of results in different types of research

“

The sports field requires prepared professionals and we give you the keys to position yourself among the professional elite"

03 Course

Our teaching team, with a Postgraduate Certificate in High Performance in Sports, has a wide prestige in the profession and are professionals with years of teaching experience who have come together to help you give a boost to your profession. To this end, they have developed this Postgraduate Certificate with recent innovations in the subject that will allow you to train and improve your skills in this sector.



“

Learn from the best professionals and become a successful professional yourself”

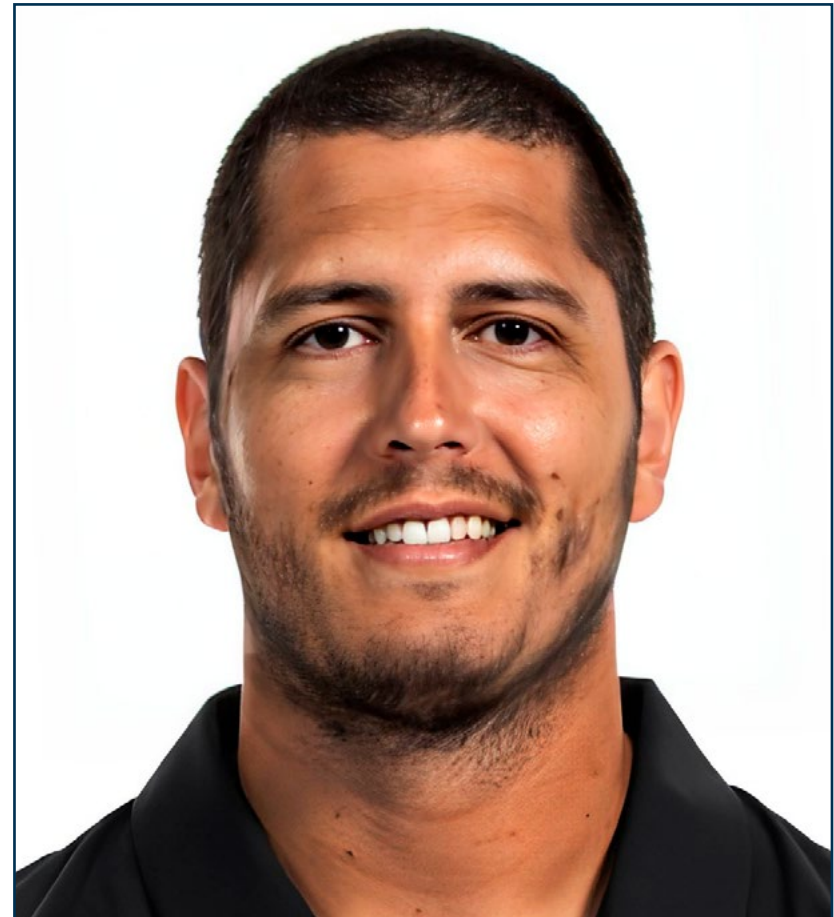
International Guest Director

Tyler Friedrich, Ph.D., is a leading personality in the international field of Sports Performance and Applied Sports Science. With a strong academic background, he has demonstrated an exceptional commitment to excellence and innovation, and has contributed to the success of numerous elite athletes internationally.

Throughout his career, Tyler Friedrich has deployed his expertise in a wide range of sporting disciplines, from football to swimming, volleyball to field hockey. His work in performance data analysis, especially through the Catapult athlete GPS system, and his integration of sports technology into performance programs, has established him as a leader in athletic performance optimization.

As Director of Sports Performance and Applied Sports Science, Dr. Friedrich has led strength and conditioning training, as well as the implementation of specific programs for several Olympic sports, including volleyball, rowing and gymnastics. Here, he has been responsible for integrating equipment services, sports performance in soccer and sports performance in Olympic sports. In addition, incorporating DAPER sports nutrition within an athlete performance team.

Also certified by USA Weightlifting and the National Strength and Conditioning Association, he is recognized for his ability to combine theoretical and practical knowledge in the development of high performance athletes. In this way, Dr. Tyler Friedrich has left an indelible mark on the world of Sports Performance, being an outstanding leader and driver of innovation in his field.



Dr. Friedrich, Tyler

- Director of Sports Performance and Applied Sports Science at Stanford University
- Sports Performance Specialist
- Associate Director of Athletics and Applied Performance at Stanford University
- Director of Olympic Sport Performance at Stanford University
- Sports Performance Coach at Stanford University
- Ph.D. in Philosophy, Health and Human Performance from Concordia University Chicago
- Master of Science in Exercise Science from the University of Dayton
- Bachelor of Science, Exercise Physiology from the University of Dayton

“

Thanks to TECH, you will be able to learn with the best professionals in the world”

Address



Rubina, Dardo

- CEO of Test and Training
- EDM Physical Training Coordinator
- Physical trainer of the EDM First Team
- Master's Degree in ARD COE
- EXOS Certification
- Specialist in Strength Training for the Prevention of Injuries, Functional and Physical-Sports Rehabilitation
- Specialist in Strength Training Applied to Physical and Sports Performance
- Certification in Weight Management and Physical Performance Technologies
- Postgraduate course in Physical Activity in Populations with Pathologies
- Diploma in Advanced Studies (DEA) University of Castilla la Mancha
- PhD Candidate in ARD



Professors

Del Rosso, Sebastián

- ◆ Doctor in Health Sciences
- ◆ Master's Degree in Physical Education
- ◆ Reviewer of scientific publications

“

Our teaching team will provide you with all their knowledge so that you are up to date with the latest information on the subject”

04 Structure and Content

The structure of the contents has been designed by a team of professionals who recognise the implications that training has on daily practice, who are aware of the relevance of current quality training in the field of High Performance in Sports and are committed to quality teaching using new educational technologies.



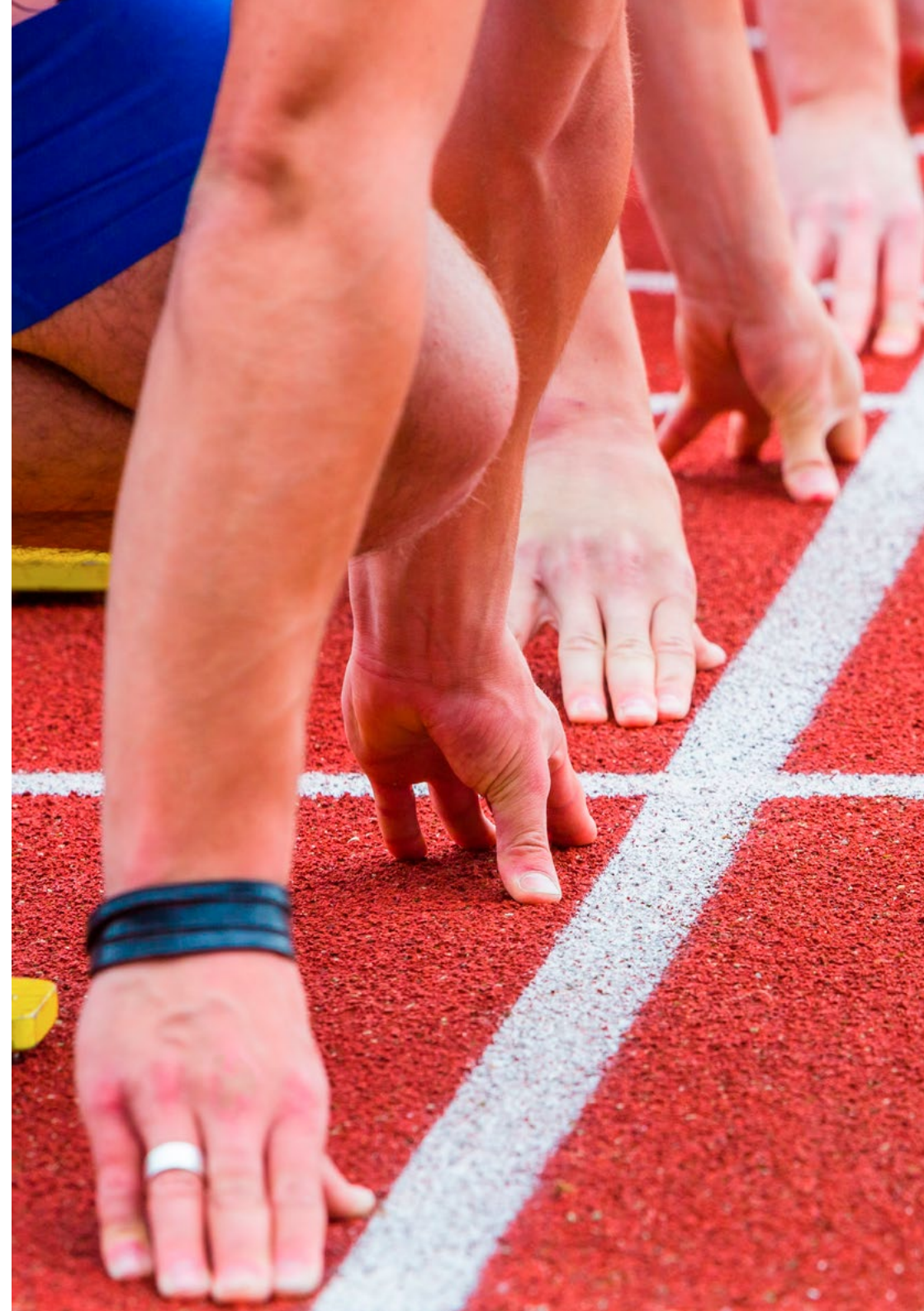


“

We have the most complete and up-to-date scientific program on the market. We want to provide you with the best training"

Module 1. Statistics Applied to Performance and Research

- 1.1. Notions of Probability
 - 1.1.1. Simple Probability
 - 1.1.2. Conditional Probability
 - 1.1.3. Bayes' Theorem
- 1.2. Probability Distributions
 - 1.2.1. Binomial Distribution
 - 1.2.2. Poisson distribution
 - 1.2.3. Normal Distribution
- 1.3. Statistical Inference
 - 1.3.1. Population Parameters
 - 1.3.2. Estimation of Population Parameters
 - 1.3.3. Sampling Distributions Associated with the Normal Distribution
 - 1.3.4. Distribution of the Sample Mean
 - 1.3.5. Point Estimators
 - 1.3.6. Properties of Estimators
 - 1.3.7. Estimator Comparison Criteria
 - 1.3.8. Estimators by Confidence Regions
 - 1.3.9. Method of Obtaining Confidence Intervals
 - 1.3.10. Confidence Intervals Associated With Normal Distribution
 - 1.3.11. Central Limit Theorem
- 1.4. Hypothesis Test
 - 1.4.1. P-Value
 - 1.4.2. Statistical Power
- 1.5. Exploratory Analysis and Descriptive Statistics
 - 1.5.1. Graphs and Tables
 - 1.5.2. Chi-Square Test
 - 1.5.3. Relative Risk
 - 1.5.4. *Odds Ratio*



- 1.6. The T-Test
 - 1.6.1. One-Sample T-Test
 - 1.6.2. T-Test for Two Independent Samples
 - 1.6.3. T-Test for Paired Samples
- 1.7. Correlation Analysis
- 1.8. Simple Linear Regression Analysis
 - 1.8.1. The Regression Line and its Coefficients
 - 1.8.2. Residuals
 - 1.8.3. Regression Assessment Using Residuals
 - 1.8.4. Coefficient of Determination
- 1.9. Variance and Analysis of Variance (ANOVA)
 - 1.9.1. One-Way ANOVA
 - 1.9.2. Two-Way ANOVA
 - 1.9.3. ANOVA for Repeated Measures
 - 1.9.4. Factorial ANOVA



A unique, key, and decisive educational experience to boost your professional development"

05 Methodology

This 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 method of skills and knowledge development. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“*At TECH, you will experience a way of learning 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 innova-

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 we face 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 prepare 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.

With this methodology, we have enabled 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, markets, and financial 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.

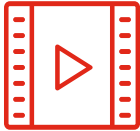
Relearning will allow you to learn with less effort and better performance, involving you more in your education, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

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 adapted in 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.



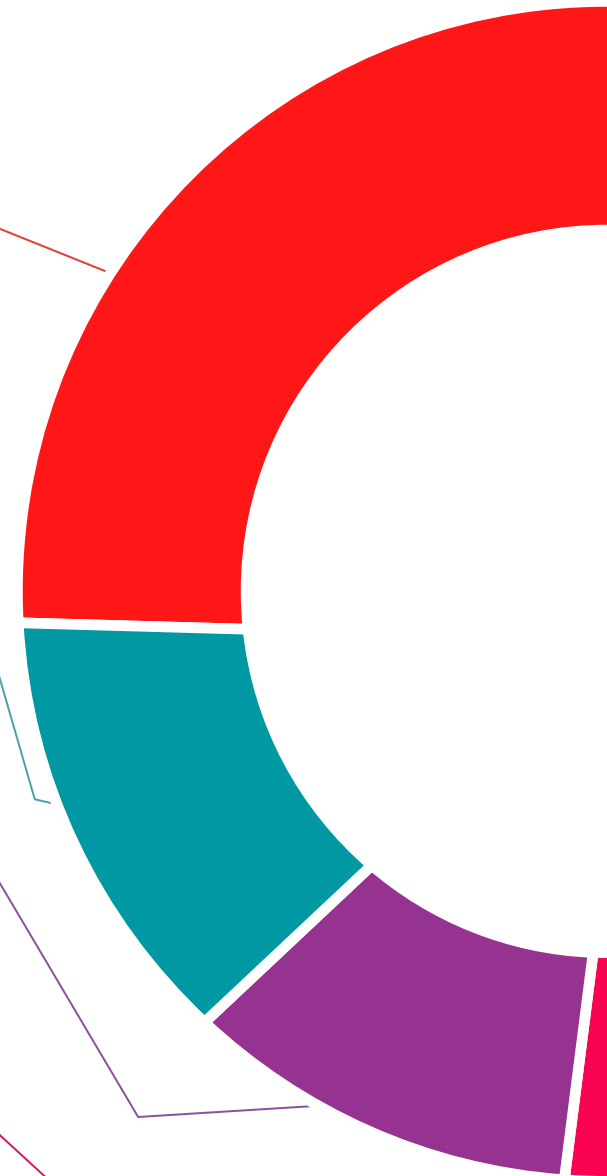
Practicing Skills and Abilities

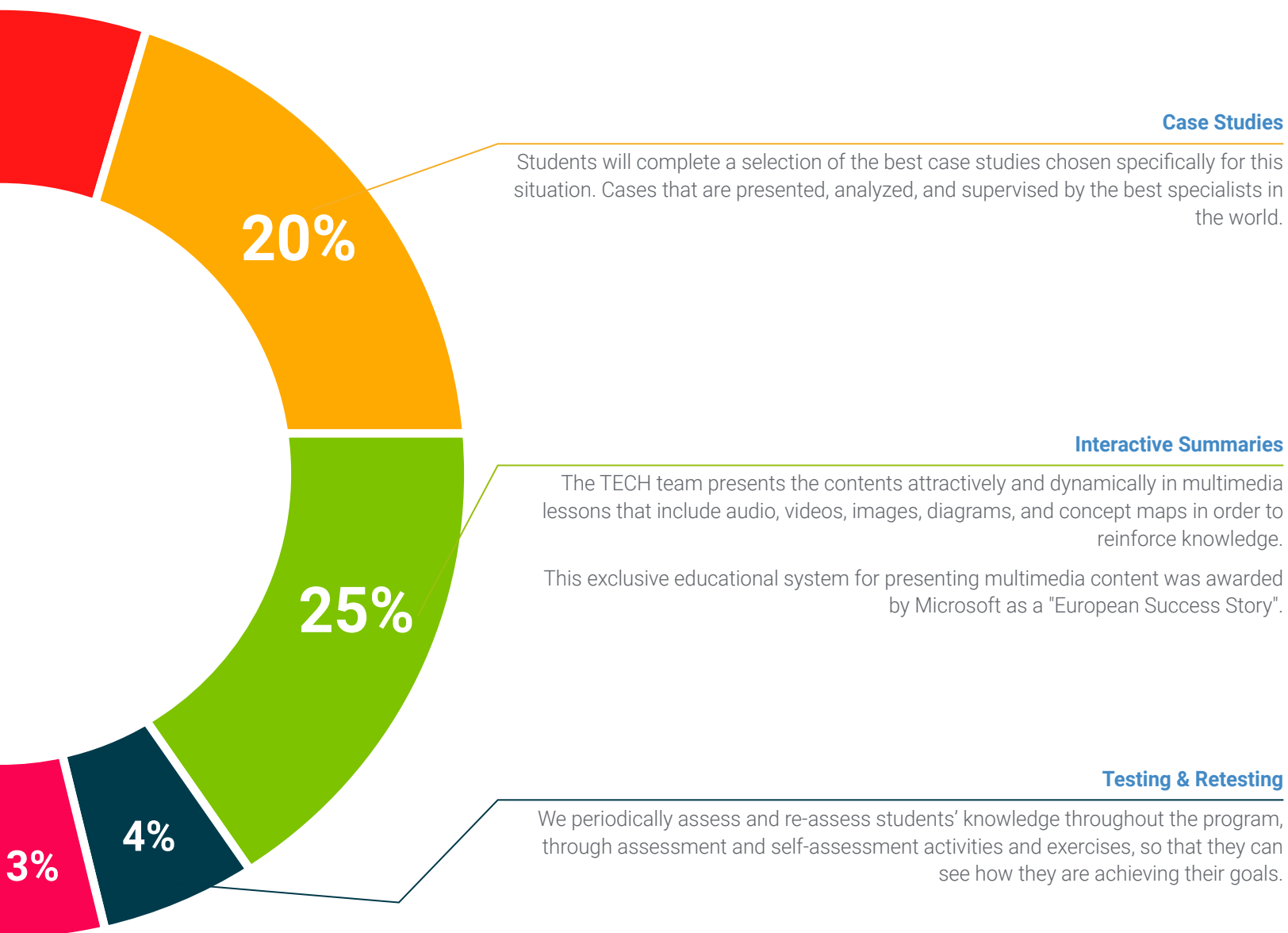
They will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



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 situation. 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 assess and re-assess students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



06 Certificate

The Postgraduate Certificate in Statistics Applied to Performance and Research 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 Statistics Applied to Performance and Research** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive with acknowledgment of receipt their corresponding Postgraduate **Certificate issued by TECH Technological University via tracked delivery.**

The degree 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 Committee.

Title: **Postgraduate Certificate in Statistics Applied to Performance and Research**

Endorsed by the NBA





Postgraduate Certificate Statistics Applied to Performance and Research

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

Postgraduate Certificate

Statistics Applied to Performance and Research

Endorsed by the

