

# Postgraduate Certificate Biostatistical Analysis for Nutritional Genomics





## Postgraduate Certificate Biostatistical Analysis for Nutritional Genomics

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

Website: [www.techtute.com/us/pharmacy/postgraduate-certificate/biostatistical-analysis-nutritional-genomics](http://www.techtute.com/us/pharmacy/postgraduate-certificate/biostatistical-analysis-nutritional-genomics)

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# 01

# Introduction

Biostatistical analyses play a key role in Nutritional Genomics research, and pharmacists must keep abreast of advances in this field. This is the opportunity to get up to date on everything related to this field, with the help of the best professionals in the subject. A Postgraduate Certificate that will enable you to improve in your daily practice with the help of the best teaching methodology.





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*Nutritional Genomics is a booming discipline that needs qualified pharmacists who are able to advise their patients with the utmost rigor”*

This Postgraduate Certificate covers everything a health professional needs to know about Biostatistical Analysis and Nutritional Genomics. Therefore, the material is organized in the best possible way, allowing the professional to acquire all the knowledge needed, without leaving them with doubts or information gaps. It is the best program on the market because it offers students the opportunity to learn all the innovation in the field of Nutritional Genomics, 100% online.

Specifically, the program analyzes the methodology used in human clinical studies and delves into the designs used mainly in nutritional epidemiology. In this way, the focus is placed on the critical points of statistical analysis of studies in large nutrition populations.

This Postgraduate Certificate provides students with specific tools and skills to successfully develop their professional career in the field of Nutritional Genomics and Precision Nutrition.

As it is an online Postgraduate Certificate, the student is not restricted by fixed schedules or the need to move to another physical location, but can access the content at any time of the day, balancing their work or personal life with their academic life.

This **Postgraduate Certificate in Biostatistical Analysis for Nutritional Genomics** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ◆ The development of case studies presented by experts in Nutritional Genomics and Precision Nutrition
- ◆ The graphic, schematic and eminently practical contents of the course are designed to provide all the essential information required for professional practice
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Special emphasis on innovative methodologies in Biostatistical Analysis for Nutritional Genomics
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*Give a boost to your profession  
with the best education you can  
find on the market"*

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*This Postgraduate Certificate is the best investment you can make when selecting a refresher program to update your knowledge in Biostatistical Analysis for Nutritional Genomics"*

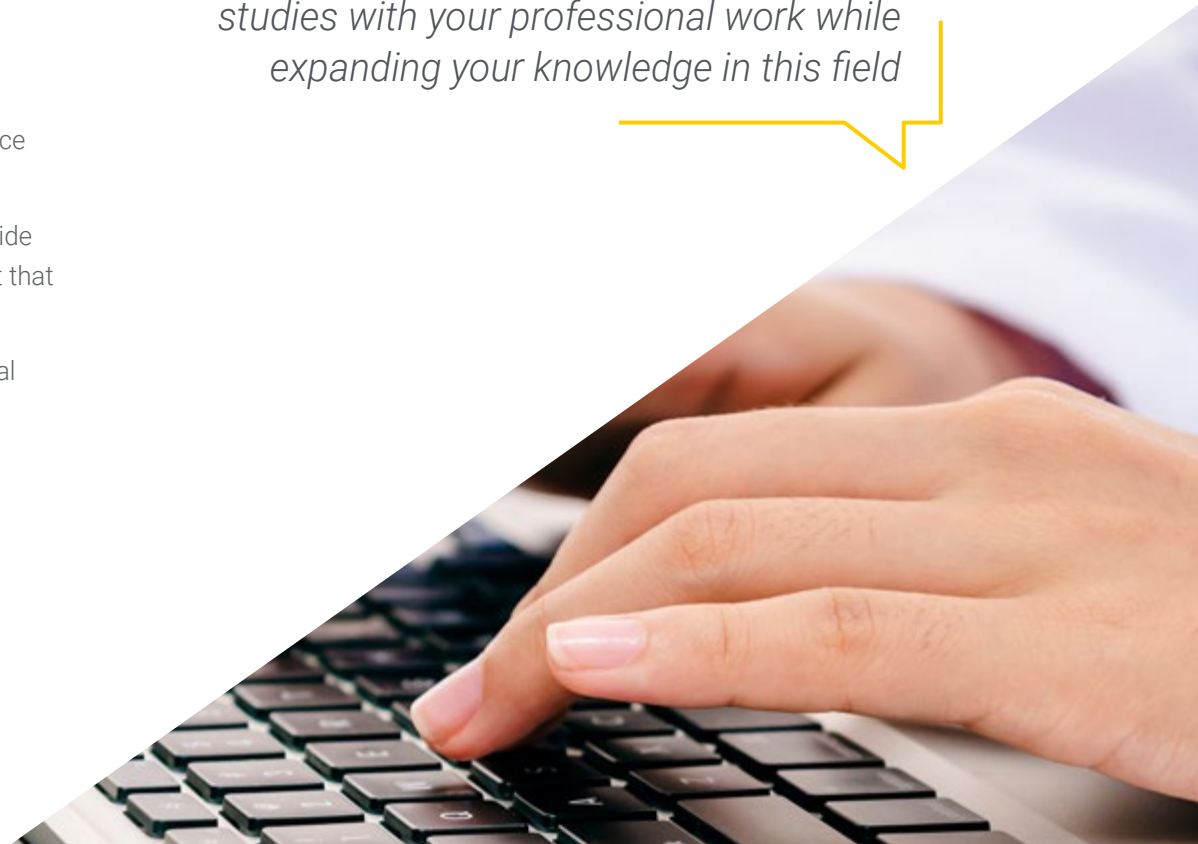
Its teaching staff includes professionals from the field of nutrition, who contribute their work experience to this program, as well as renowned specialists from reference societies and prestigious universities.

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 an immersive program designed 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 developed by renowned and experienced experts in Biostatistical Analysis for Nutritional Genomics.

*This program offers teaching in simulated environments, which provides an immersive learning experience designed to prepare for real-life situations*

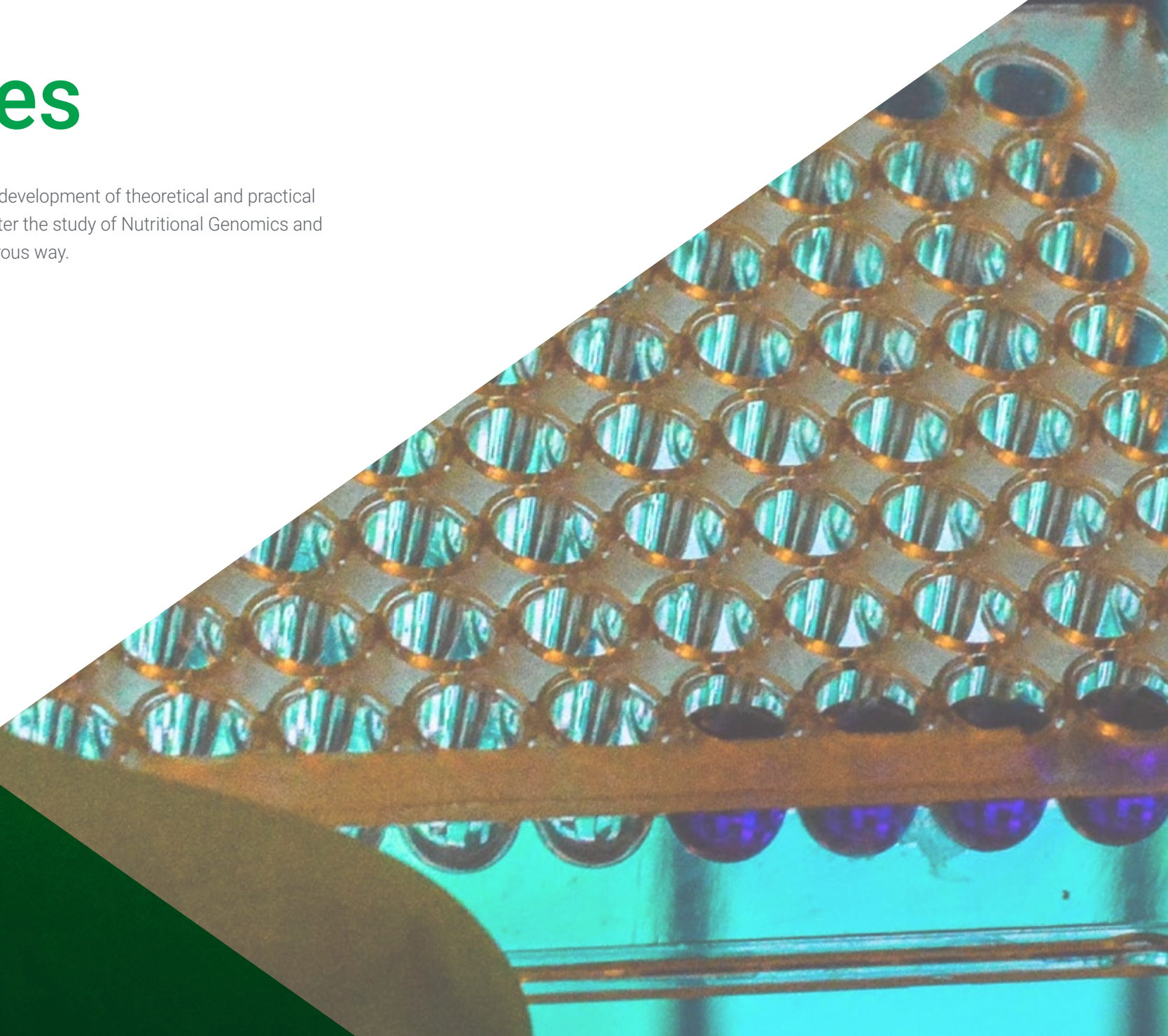
*This 100% online Postgraduate Certificate will allow you to combine your studies with your professional work while expanding your knowledge in this field*



02

# Objectives

The main objective of the program is the development of theoretical and practical learning, so that the pharmacist can master the study of Nutritional Genomics and Precision Nutrition in a practical and rigorous way.





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*This refresher program will generate a sense of confidence in the performance of your daily practice, which will help you grow personally and professionally”*



## General Objectives

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- ◆ Acquire theoretical knowledge of human population genetics
- ◆ Acquire knowledge of Genomic and Precision Nutrition to be able to apply it in clinical practice
- ◆ Learn about the trajectory of this innovative field and the key studies that contributed to its development
- ◆ Know in which pathologies and conditions of human life Nutritional Genomics and Precision Nutrition can be applied
- ◆ Be able to assess individual response to nutrition and dietary patterns in order to promote health and disease prevention
- ◆ Learn how nutrition influences gene expression in humans
- ◆ Learn about new concepts and future trends in the field of Genomic and Precision Nutrition
- ◆ Adapt personalized dietary and lifestyle habits according to genetic polymorphisms
- ◆ Provide health professionals with all the up-to-date knowledge in the field of Genomic and Precision Nutrition in order to know how to apply it in their professional work
- ◆ Put all the up-to-date knowledge into perspective. Where we are now and where we are headed so that the student can appreciate the ethical, economic and scientific implications in the field.



# Data Analysis Report



## Specific Objectives

- ◆ Acquire the necessary knowledge to correctly design experimental studies in the areas of Nutrigenomics and Nutrigenetics
- ◆ Gain in-depth knowledge in statistical models for clinical studies in humans

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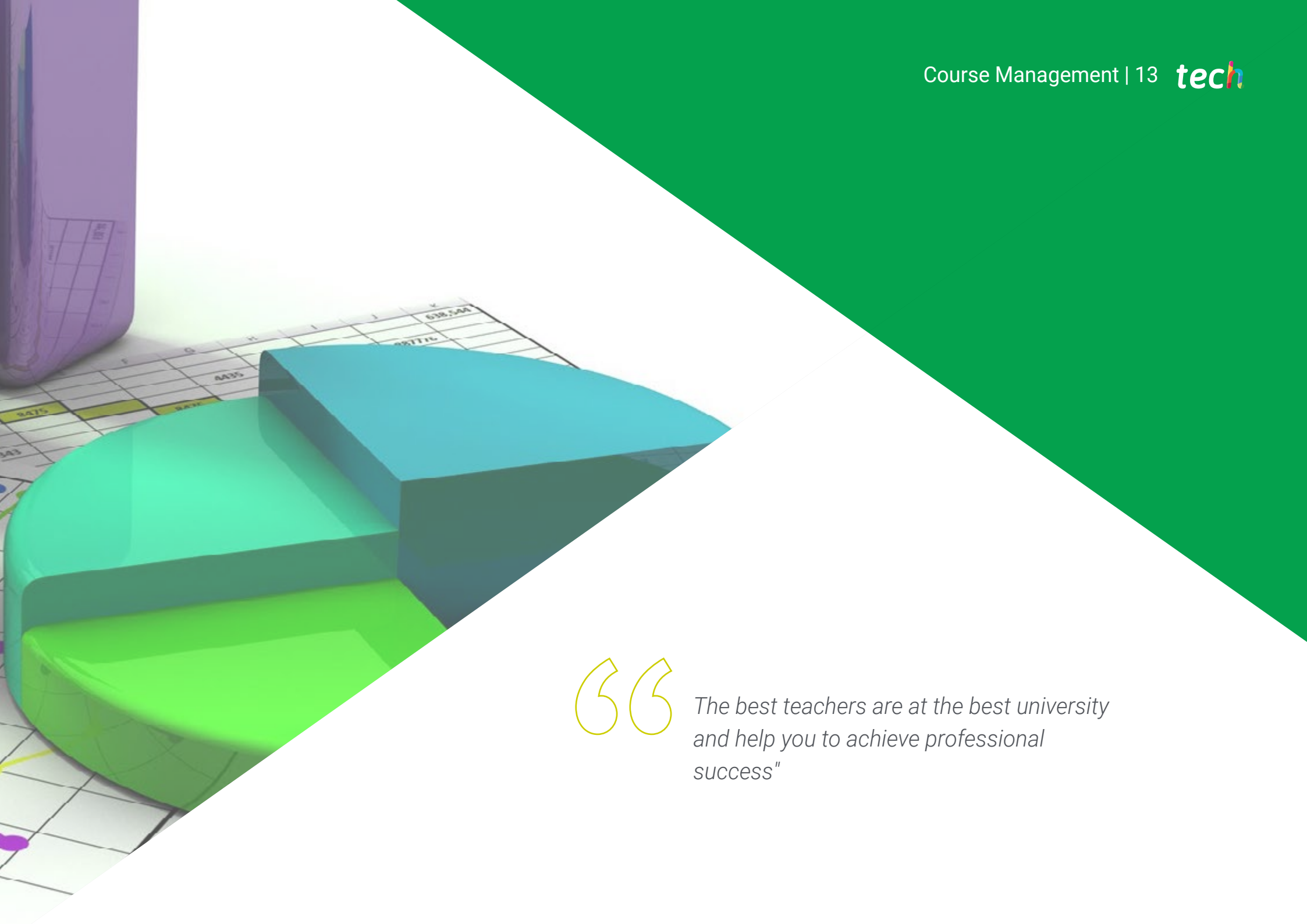
*Take the step and join one of the largest online universities in the world”*

03

# Course Management

The program's faculty includes leading experts in Genomic and Precision Nutrition, who contribute their work experience to this program. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.





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*The best teachers are at the best university and help you to achieve professional success”*

## Management



### Dr. Konstantinidou, Valentini

- PhD in Biomedicine
- Lecturer in Nutrigenetics
- Founder of DNANUTRICOACH®
- Dietitian- Nutritionist
- Food Technologist



04

# Structure and Content

The structure of the contents has been designed by a team of professionals who know about the implications of education in daily practice, are aware of the current relevance of education in Nutritional Genomics and Precision Nutrition and who are committed to quality teaching through new educational technologies.







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*We have the most complete and up-to-date scientific program on the market. We strive for excellence and for you to achieve it too"*

## Module 1. Biostatistics for Genomic Nutrition

- 1.1. Biostatistics
  - 1.1.1. Human Studies Methodology
  - 1.1.2. Introduction to Experimental Design
  - 1.1.3. Clinical
- 1.2. Statistical Aspects of a Protocol
  - 1.2.1. Introduction, Objectives, Description of Variables
  - 1.2.2. Quantitative Variables
  - 1.2.3. Qualitative Variables
- 1.3. Design of Clinical Studies in Humans, Methodological Guidelines
  - 1.3.1. Designs with 2 Treatments 2x2
  - 1.3.2. Designs with 3 Treatments 3x3
  - 1.3.3. Parallel Design, This is the Step to Get, Adaptive
  - 1.3.4. Sample Size Determination and Power Analysis
- 1.4. Evaluation of Treatment Effect
  - 1.4.1. For Parallel Design, for Repeated Measurements, for Cross-Over Design
  - 1.4.2. Randomization of the Order of Treatment Assignment
  - 1.4.3. Carry-Over Effect (Wash Out)
- 1.5. Descriptive Statistics, Hypothesis Testing, Risk Calculation
  - 1.5.1. Consort, Populations
  - 1.5.2. Study Populations
  - 1.5.3. Control Group
  - 1.5.4. Subgroup Analysis Types of Studies
- 1.6. Statistical Errors
  - 1.6.1. Measurement Errors
  - 1.6.2. Random Error
  - 1.6.3. Systematic Error
- 1.7. Statistical Bias
  - 1.7.1. Selection Bias
  - 1.7.2. Observation Bias
  - 1.7.3. Assignment Bias





- 1.8. Statistical Modeling
  - 1.8.1. Continuous Variable Models
  - 1.8.2. Categorical Variables Models
  - 1.8.3. Linear Mixed Models
  - 1.8.4. Missing Data, Flow of Participants, Presentation of Results
  - 1.8.5. Adjustment for Baseline Values, Transformation of Response Variable: Differences, Ratios, Logarithms, Carry-Over Assessment
- 1.9. Statistical Modeling with Co-Variables
  - 1.9.1. ANCOVA
  - 1.9.2. Logistic Regression for Binary and Count Variables
  - 1.9.3. Multivariate Analysis
- 1.10. Statistical Programs
  - 1.10.1. The R
  - 1.10.2. SPSS

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*A unique, key and decisive experience to boost your professional development”*

05

# 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.





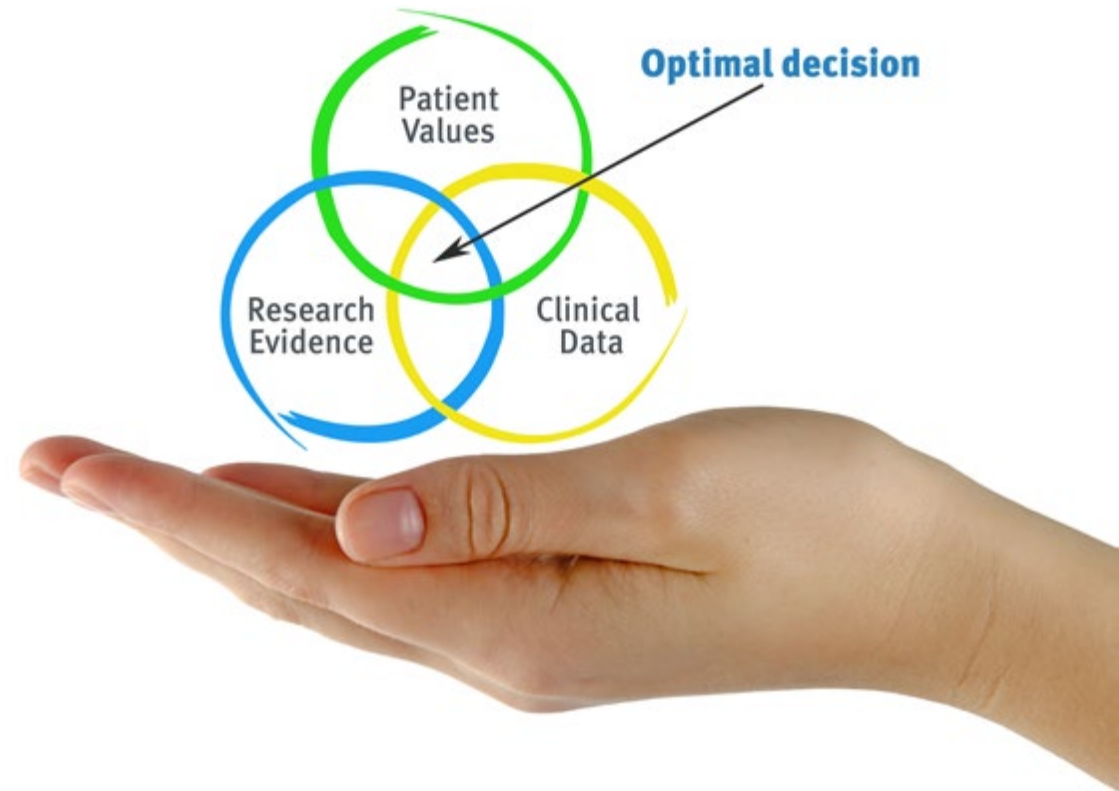
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly and more sustainably over time.

*With TECH you can experience a way of learning that is shaking the foundations of traditional universities around the world*



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching potential or because of its uniqueness or rarity. It is essential that the case is based on current professional life, attempting to recreate the actual conditions in a pharmacist's professional practice.

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*Did you know that this method was developed in 1912 at Harvard for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"*

The effectiveness of the method is justified by four fundamental achievements:

1. Pharmacists who follow this method not only achieve the assimilation of concepts, but also develop their mental capacity through exercises to evaluate real situations and apply their knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Relearning.

Our university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.



*Pharmacists will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning*



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 115,000 pharmacists have been trained with unprecedented success, in all clinical specialties regardless of workload. This teaching methodology is developed in a highly demanding environment, with a university student body of high 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 specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success*

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.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

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.



### Video Techniques and Procedures

TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



### 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 unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



### 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.





### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



### Testing & Retesting

The student's knowledge is periodically assessed and re-assessed throughout the program, through evaluative and self-evaluative activities and exercises: in this way, students can check how they are doing in terms of achieving their goals.



### Classes

There is scientific evidence on the usefulness of learning by observing experts: The system termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.



### Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06

# Certificate

The Postgraduate Certificate in Biostatistical Analysis for Nutritional Genomics guarantees, 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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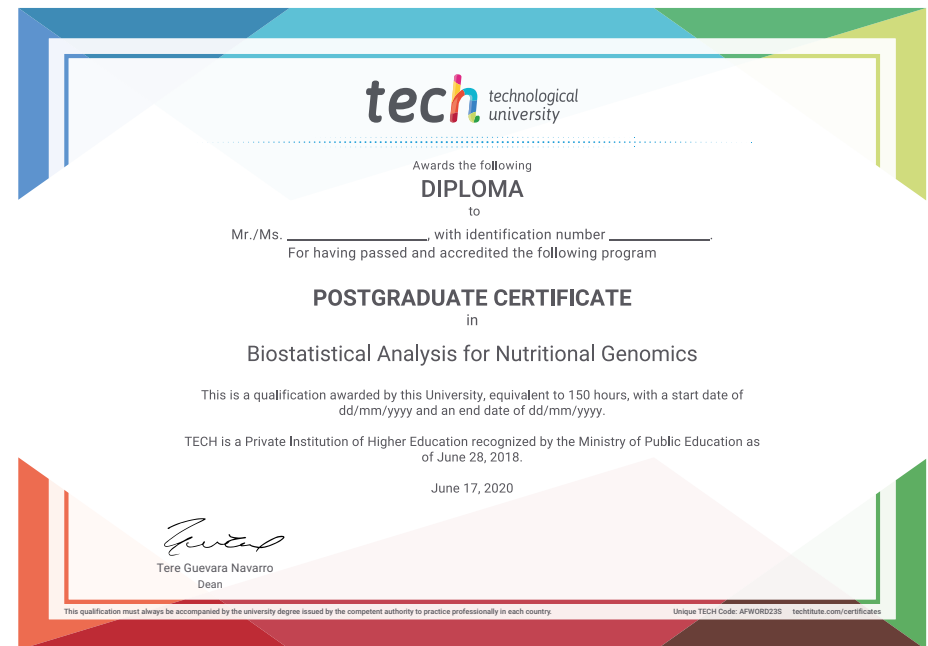
*Successfully complete this program and receive your university certificate without travel or laborious paperwork”*

This **Postgraduate Certificate in Biostatistical Analysis for Nutritional Genomics** 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 Biostatistical Analysis for Nutritional Genomics**  
Official Number 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  
development language  
classroom



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