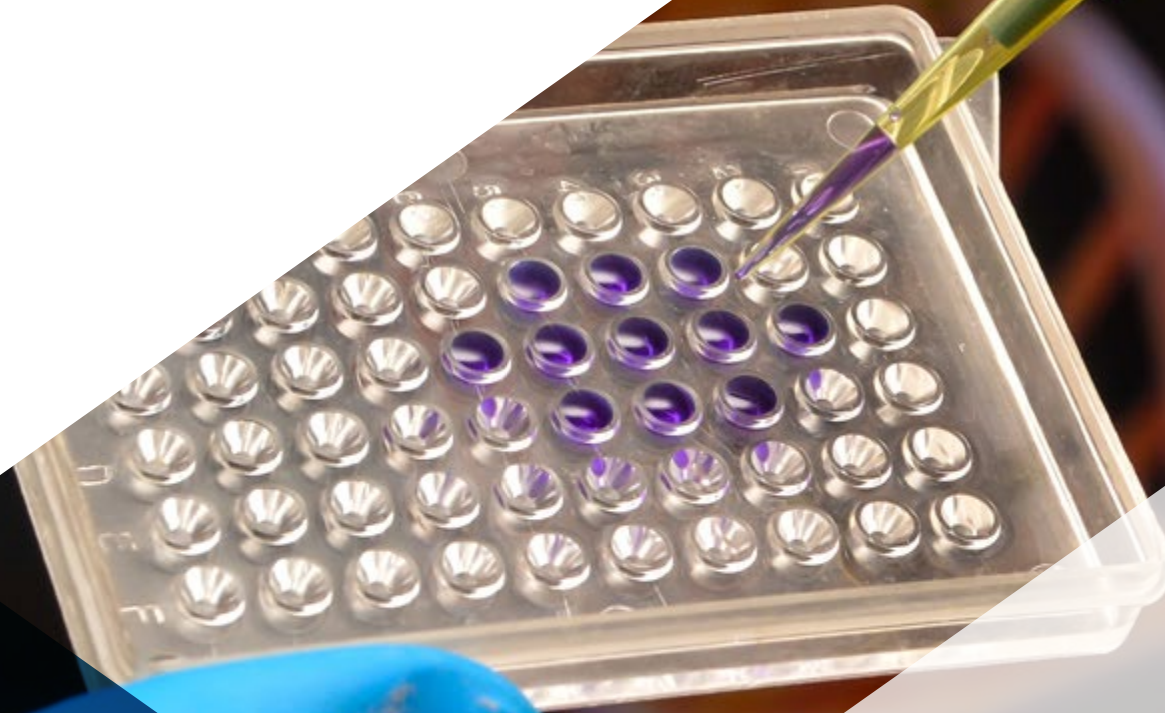


# Postgraduate Certificate Nutritional Genomics and Precision Nutrition





## Postgraduate Certificate Nutritional Genomics and Precision Nutrition

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Global University
- » Credits: 12 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-certificate/nutritional-genomics-precision-nutrition](http://www.techtute.com/us/medicine/postgraduate-certificate/nutritional-genomics-precision-nutrition)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 18*

05

Methodology

---

*p. 22*

06

Certificate

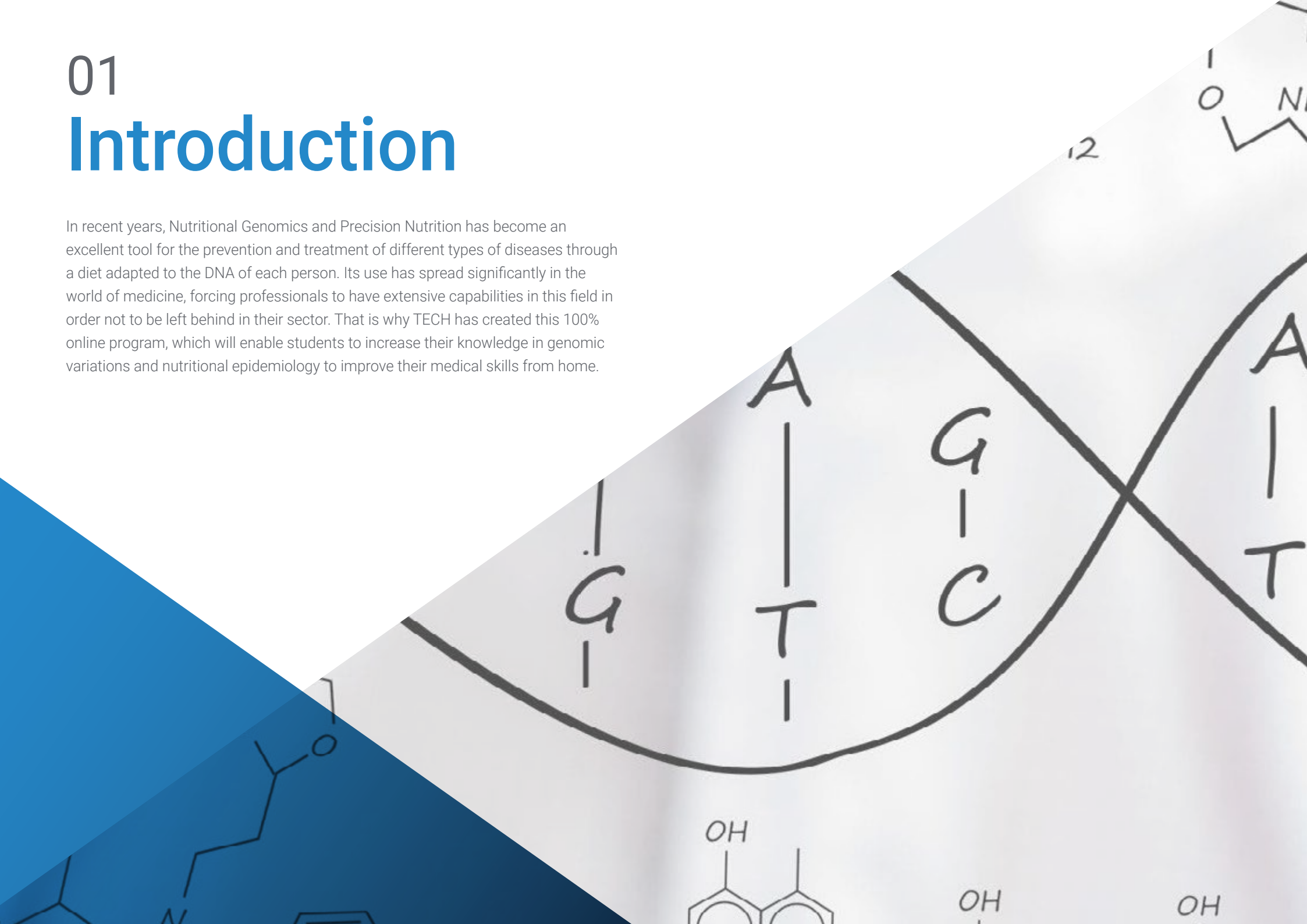
---

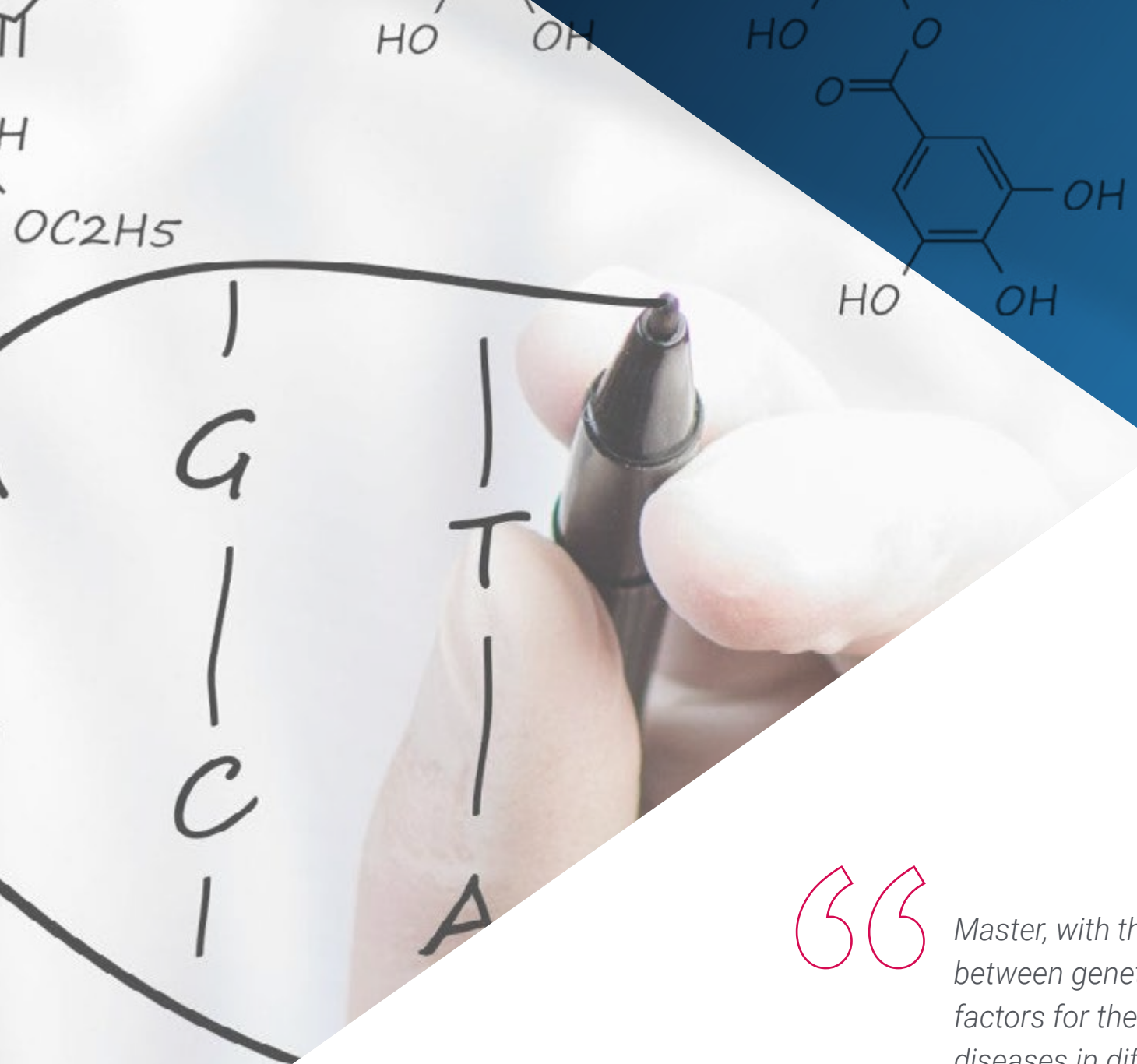
*p. 30*

# 01

# Introduction

In recent years, Nutritional Genomics and Precision Nutrition has become an excellent tool for the prevention and treatment of different types of diseases through a diet adapted to the DNA of each person. Its use has spread significantly in the world of medicine, forcing professionals to have extensive capabilities in this field in order not to be left behind in their sector. That is why TECH has created this 100% online program, which will enable students to increase their knowledge in genomic variations and nutritional epidemiology to improve their medical skills from home.





“

*Master, with this program, the relationship between genetics and environmental factors for the development of complex diseases in different types of patients"*

Over the last decade, Genomic Nutrition has progressively gained ground in medical consultations due to the benefits it offers, according to the numerous investigations carried out in this field. In this line, it makes it possible to adapt the diet to the genetic particularities of each person and their natural predisposition to suffer from various diseases, with the aim of minimizing the risk of contracting them or favoring their adequate control. Since its application has a positive impact on the patient's well-being, physicians must manage this discipline in order to provide high quality care.

For this reason, TECH has developed this Postgraduate Certificate, through which the student will assimilate the most relevant and updated knowledge in the area of Nutritional Genomics and Precision Nutrition, as well as a review of its current situation and its presence in health institutions. During this academic period, they will identify the influence of genetics and environmental factors in the development of complex diseases and will adopt the findings of the main studies carried out in the field of Human Nutrition and Genomics. Additionally, they will determine the quality criteria of nutrigenetic tests or will master the ethical and legal aspects of this discipline.

Because this program is taught through a 100% online methodology, the student will perfectly combine their personal and professional duties with an excellent learning experience. Likewise, this program is designed by cutting-edge experts in the field of Nutritional Genomics and Precision Nutrition, who will provide you with knowledge that is most in tune with the latest developments in this area.

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

- ◆ The development of case studies presented by experts in Nutritional Genomics and Precision Nutrition
- ◆ The graphic, schematic and practical contents with which it is conceived scientific and practical information on those disciplines that are essential for professional practice
- ◆ The practical exercises where the self-evaluation 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



*Evaluate the quality criteria required for the performance of nutrigenetic tests thanks to this Postgraduate Certificate"*

“

*Thanks to the study facilities provided by this program, you will easily combine your learning with your personal and work obligations"*

*In only 12 weeks, you will be able to adopt the best knowledge in Nutritional Genomics and Precision Nutrition that will enrich your professional practice.*

*Identify the ethical and legal aspects of Nutritional Genomics to develop tasks in this field with maximum safety.*

The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

The design of this program focuses on Problem-Based Learning, in which the professional will have to try to solve the different professional practice situations that will arise throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.



# 02 Objectives

TECH has created this Postgraduate Certificate with the main premise of providing the medical professional with the most relevant knowledge and advances in the field of Nutritional Genomics and Precision Nutrition to adopt the mechanisms of this discipline in their work methodology. Therefore, they will identify the keys of human DNA and nutritional epidemiology to develop a first level attention to their patients, assured through the achievement of the following general and specific objectives.





“

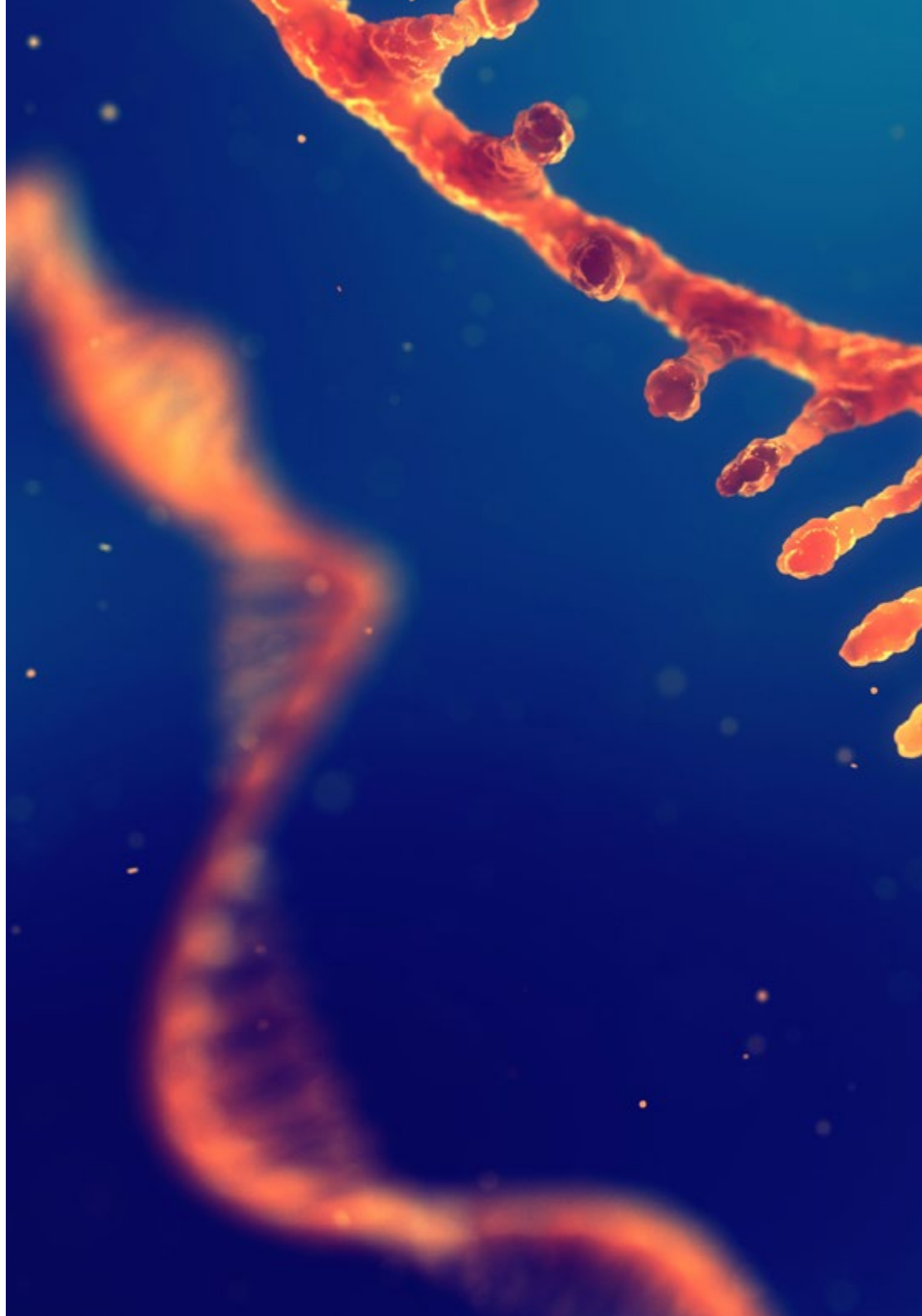
*Delve into the intricacies of nutritional epidemiology thanks to this Postgraduate Certificate that TECH offers you”*



## General Objectives

---

- ◆ Acquire theoretical knowledge of human population genetics
- ◆ Acquire knowledge of Nutritional Genomics 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 prevent disease
- ◆ Understand how nutrition influences gene expression in humans
- ◆ Learn about new concepts and future trends in the field of Nutritional Genomics 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 Nutritional Genomics and Precision Nutrition in order to know how to apply it in their professional activity
- ◆ Put all the updated knowledge in perspective. Where it is and where it is going so that the student can appreciate the ethical, economic and scientific implications in the field





## Specific Objectives

---

- ◆ Present definitions necessary to follow the thread of the following modules
- ◆ Explain relevant points of human DNA, nutritional epidemiology, from the scientific method
- ◆ Analyze key studies in Genomic Nutrition
- ◆ Present and analyze key aspects for the application of Nutritional Genomics in society
- ◆ Reflect on and analyze past and present cases and anticipate future market developments in the field of Nutritional Genomics

“

*Increase your knowledge in a discipline increasingly used in the field of medicine to improve the treatment of various diseases”*

03

# Course Management

With the idea in mind of offering academic programs with an excellent educational level, this program has a teaching staff made up of professionals who actively work in the area of Nutritional Genomics, specialized in food composition. Additionally, the didactic resources characteristic of this Postgraduate Certificate have been expressly elaborated by these experts. As a result, all the contents provided to the student will be in tune with the latest developments in this sector.





“

*The teachers who teach this program have experience in the field of Nutritional Genomics and Precision Nutrition to provide you with the most professionally applicable knowledge in this area"*

## International Guest Director

Dr. Caroline Stokes is a specialist in **Psychology** and **Nutrition**, with a doctorate and a habilitation in **Medical Nutrition**. After a distinguished career in this field, she leads the **Food and Health Research** group at the Humboldt University of Berlin. This team collaborates with the Department of Molecular Toxicology at the German Institute of Human Nutrition Potsdam-Rehbrücke. Previously, he has worked at the Medical School of Saarland University in Germany, the Cambridge Medical Research Council and the UK National Health Service.

One of her goals is to discover more about the fundamental role that **Nutrition** plays in improving the overall health of the population. To this end, he has focused on elucidating the effects of fat-soluble vitamins such as **A, D, E and K**, the **amino acid methionine**, lipids such as **omega-3 fatty acids** and **probiotics** for both the prevention and treatment of diseases, particularly those related to hepatology, neuropsychiatry and aging.

Her other lines of research have focused on plant-based diets for the prevention and treatment of diseases, including liver and psychiatric diseases. He has also studied the spectrum of **vitamin D** metabolites in health and disease. She has also participated in projects to analyze new sources of vitamin D in plants and to compare the **luminal** and **mucosal microbiome**.

In addition, Dr. Caroline Stokes has published a long list of scientific papers. Some of her areas of expertise are **Weight Loss**, **Microbiota** and **Probiotics**, among others. The outstanding results of her research and her constant commitment to her work have led her to win the **National Health Service Journal Award for the Nutrition and Mental Health Program** in the UK.



## Dr. Stokes, Caroline

---

- ♦ Head of the Food and Health Research Group at the Humboldt University of Berlin, Germany
- ♦ Researcher at the German Institute of Human Nutrition Potsdam-Rehbruecke
- ♦ Professor of Food and Health at the Humboldt University of Berlin
- ♦ Scientist in Clinical Nutrition at the University of Saarland
- ♦ Nutrition Consultant at Pfizer
- ♦ PhD in Nutrition at the University of Saarland
- ♦ Postgraduate Diploma in Dietetics at King's College London, University of London
- ♦ Master's Degree in Human Nutrition from the University of Sheffield

“

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

## Management



### Dr. Konstantinidou, Valentini

- ♦ Dietitian-Nutritionist Specialist in Nutrigenetics and Nutrigenomics
- ♦ Founder of DNANutricoach
- ♦ Creator of the Food Coaching method to change eating habits
- ♦ Lecturer in Nutrigenetics
- ♦ Doctorate in Biomedicine
- ♦ Dietitian- Nutritionist
- ♦ Food Technologist
- ♦ Accredited Life Coach of the British body IPAC&M
- ♦ Member of: American Society for Nutrition





# 04

## Structure and Content

The curriculum of this program has been designed to provide the student with the most useful and innovative knowledge regarding Nutritional Genomics, its application and its current situation. The didactic materials that will be available throughout this Postgraduate Certificate are accessible in a wide range of varied textual and multimedia formats, with TECH's objective of providing students with 100% online learning, in which they can manage their own schedules and enjoy an education adapted to their academic preferences.





“

*The Relearning system characteristic of this program will allow you to learn at your own pace without depending on external limitations”*

## Module 1. Introduction to Nutritional Genomics and Precision Nutrition

- 1.1. Human Genome
  - 1.1.1. DNA Discovery
  - 1.1.2. Year 2001
  - 1.1.3. Human Genome Project
- 1.2. Variations Relevant to Nutrition
  - 1.2.1. Genomic Variations and the Search for Disease Genes
  - 1.2.2. Environment vs. Genetic and Heritability
  - 1.2.3. Differences between SNPs, Mutations and CNVs
- 1.3. The Genome of Rare and Complex Diseases
  - 1.3.1. Examples of Rare Diseases
  - 1.3.2. Examples of Complex Diseases
  - 1.3.3. Genotype and Phenotype
- 1.4. Precision Medicine
  - 1.4.1. Influence of Genetics and Environmental Factors on Complex Diseases
  - 1.4.2. Need for Precision The Problem of Heritability Lost. Concept of Interaction
- 1.5. Precision Nutrition vs. Community Nutrition
  - 1.5.1. The Principles of Nutritional Epidemiology
  - 1.5.2. Current Bases of Nutritional Research
  - 1.5.3. Experimental Designs in Precision Nutrition
- 1.6. Levels of Scientific Evidence
  - 1.6.1. Epidemiological Pyramid
  - 1.6.2. Regulation
  - 1.6.3. Official Guides



- 1.7. Consortia and Major Studies in Human Nutrition and Genomic Nutrition
  - 1.7.1. Precision4Health Project
  - 1.7.2. Framingham
  - 1.7.3. PREDIMED
  - 1.7.4. CORDIOPREV
- 1.8. Current European Studies
  - 1.8.1. Predimed Plus
  - 1.8.2. NU-AGE
  - 1.8.3. FOOD4me
  - 1.8.4. EPIC

## Module 2. Current Market State

- 2.1. Legal Aspects
- 2.2. Ethical Aspects
- 2.3. DTC (Direct-To-Consumer) Tests
  - 2.3.1. Pros and Cons
  - 2.3.2. Myths of Early DTCs
- 2.4. Quality Criteria for a Nutrigenetic Test
  - 2.4.1. SNP Selection
  - 2.4.2. Interpretation of Results
  - 2.4.3. Laboratory Accreditations
- 2.5. Health Professionals
  - 2.5.1. Training Needs
  - 2.5.2. Criteria of Professionals Applying Genomic Nutrition
- 2.6. Nutrigenomics in the Media
- 2.7. Integration of Evidence for Personalized Nutritional Counseling
- 2.8. Critical Analysis of the Current Situation
- 2.9. Discussion Work
- 2.10. Conclusions, use of Nutritional Genomics and Precision Nutrition as Prevention

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.



“

*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 face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will 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 power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.



“

*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. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of 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 case method with the best 100% online teaching methodology available: Relearning.

This 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, a real revolution with respect to the mere study and analysis of cases.

*Professionals will learn through real cases and by resolving 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 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*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 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.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



#### 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".



#### 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, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



**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.



**Classes**

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



**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 Nutritional Genomics and Precision Nutrition guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global 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 Nutritional Genomics and Precision Nutrition** 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.

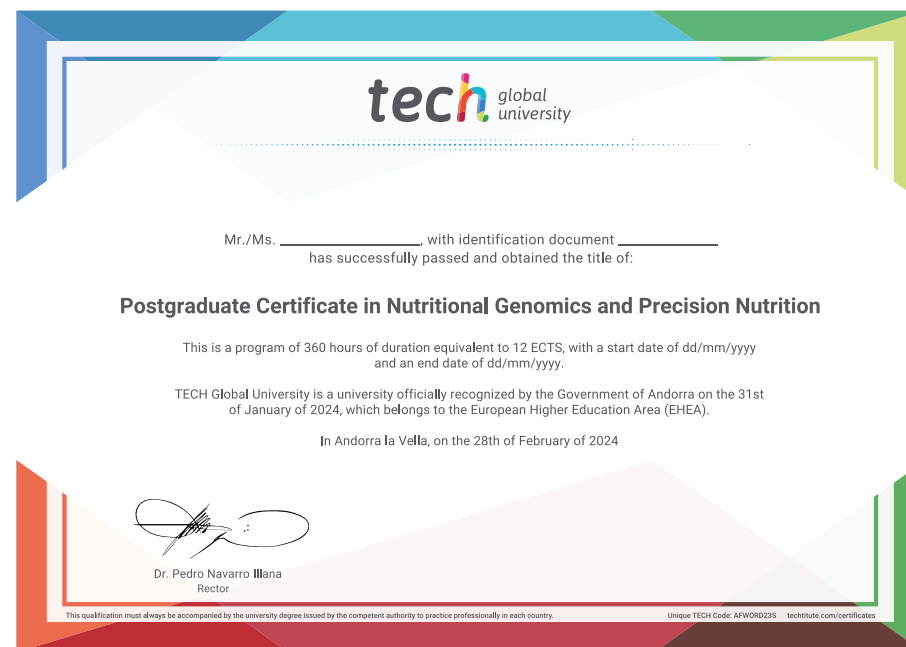
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Nutritional Genomics and Precision Nutrition**

Modality: **online**

Duration: **12 weeks**

Accreditation: **12 ECTS**



\*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.



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



**Postgraduate Certificate**  
Nutritional Genomics  
and Precision Nutrition

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Global University
- » Credits: 12 ECTS
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Certificate Nutritional Genomics and Precision Nutrition