

# Postgraduate Certificate Metabolomics





## Postgraduate Certificate Metabolomics

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

Website: [www.techtute.com/us/nutrition/postgraduate-certificate/metabolomics](http://www.techtute.com/us/nutrition/postgraduate-certificate/metabolomics)

# 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

Nutrition plays a fundamental role in people's state of health, which is why it is important for professionals in this area to have a high level of specialization. This is the best opportunity you can find to increase your knowledge in Metabolomics, a booming science that is closely linked to Nutritional Genomics and Precision Nutrition.





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*Give your career a boost thanks to this program in Metabolomics and you will notice how you advance in your daily practice”*

This Postgraduate Certificate details everything a health professional needs to know about Metabolomics. Thus, the material is organized in such a way as to advance knowledge without leaving doubts or gaps in information. It is the best learning in the market, because it offers the opportunity to know and learn online all the innovation in the field of Nutritional Genomics.

The objective of this Postgraduate Certificate is to understand and delve into the principles of Metabolomics and Proteomics. To this end, the key techniques and the main applications that Metabolomics and Proteomics could have in the field of nutrition are explained.

Thus, the program presents state-of-the-art microbiota data for application and use in clinical practice towards a precise and more individualized patient treatment.

The Postgraduate Certificate places special emphasis on the microbiota as a tool for preventive and more personalized nutrition. The main enterotypes, metabolomic profiles and how they associate with nutrition-related diseases are presented.

This Postgraduate Certificate provides students with specific tools and skills to successfully develop their professional activity related to Nutritional Genomics and Precision Nutrition.

As it is an online Postgraduate Certificate, 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 Metabolomics** 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 eminently practical contents of the course are designed to provide all the essential information required for professional practice.
- Practical exercises where self-assessment can be used to improve learning.
- Special emphasis on innovative methodologies in Nutrigenetics and Polymorphisms
- 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



*Specialize in the broad field of Metabolomics and offer specialized treatments to your patients"*

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*This Postgraduate Certificate is the best investment you can make in selecting a refresher program to update your knowledge in Metabolomics”*

Its teaching staff includes professionals belonging to the field of nutrition, who bring to this training the experience of their work, as well as recognized 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 to say, a simulated environment that will provide an immersive learning programmed to train 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. To do so, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in Metabolomics.

*This Postgraduate Certificate offers training in simulated environments, which provides an immersive learning experience designed to train 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 nutrition professional can master in a practical and rigorous way the study of Nutritional Genomics and Precision Nutrition.







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*This refresher program will provide you with a sense of confidence in your daily work, which will help you grow both personally and professionally”*



## General Objectives

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- 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 disease prevention.
- 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 up-to-date knowledge in 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.





## Specific Objectives

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- ◆ Know the Principles of Metabolomics and Proteomics.
- ◆ Delve into the Microbiota as a tool for preventive and personalized nutrition.

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

# 03

# Course Management

The program includes in its teaching staff leading experts in Nutritional Genomics and Precision Nutrition, who bring the experience of their work to this specialization. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.





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*Leading professionals in the field have come together to teach you the latest advances in Metabolomics”*

## 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

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- ♦ 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

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

## Management



### Dr. Konstantinidou, Valentini

- ◆ D. in Biomedicine
- ◆ Lecturer in Nutrigenetics
- ◆ Founder of DNANUTRICOACH®
- ◆ Dietitian- Nutritionist
- ◆ Food Technologist

## Professors

### Dr. García Santamarina, Sarela

- ◆ EIPOD Marie Curie Postdoctoral Fellow. Project: "Probing the impact of xenobiotics on gut microbial communities (or microbiome)". European Molecular Biology Laboratory (EMBL), Heidelberg, Germany
- ◆ Postdoctoral Associate. Mentoring: Professor Dennis J. Thiele. Project: "Copper homeostasis mechanisms at the host fungal pathogen interface in *Cryptococcus neoformans*". Duke University, Durham, North Carolina, USA
- ◆ PhD Degree in Basic Biomedical Research. Project "Isolation and characterization of new models of endogenous oxidative stress in *Schizosaccharomyces pombe*". Pompeu Fabra University, Barcelona, Spain





04

# Structure and Content

The structure of the contents has been designed by a team of professionals knowledgeable about the implications of training in daily practice, aware of the current relevance of learning in Nutritional Genomics and Precision Nutrition, and 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. Metabolomics-Proteomics

- 1.1. Proteomics
  - 1.1.1. Principles of Proteomics
  - 1.1.2. The Flow of Proteomics Analysis
- 1.2. Metabolomics
  - 1.2.1. Principles of Metabolomics
  - 1.2.2. Targeted Metabolomics
  - 1.2.3. Non-Targeted Metabolomics
- 1.3. The Microbiome/Microbiota
  - 1.3.1. Microbiome Data
  - 1.3.2. Human Microbiota Composition
  - 1.3.3. Enterotypes and Diet
- 1.4. Main Metabolomic Profiles
  - 1.4.1. Application to Disease Diagnosis
  - 1.4.2. Microbiota and Metabolic Syndrome
  - 1.4.3. Microbiota and Cardiovascular Diseases Effect of the Oral and Intestinal Microbiota
- 1.5. Microbiota and Neurodegenerative Diseases
  - 1.5.1. Alzheimer's Disease
  - 1.5.2. Parkinson's Disease
  - 1.5.3. ALS
- 1.6. Microbiota and Neuropsychiatric Diseases
  - 1.6.1. Schizophrenia.
  - 1.6.2. Anxiety, Depression, Autism
- 1.7. Microbiota and Obesity
  - 1.7.1. Enterotypes
  - 1.7.2. Current Studies and State of Knowledge





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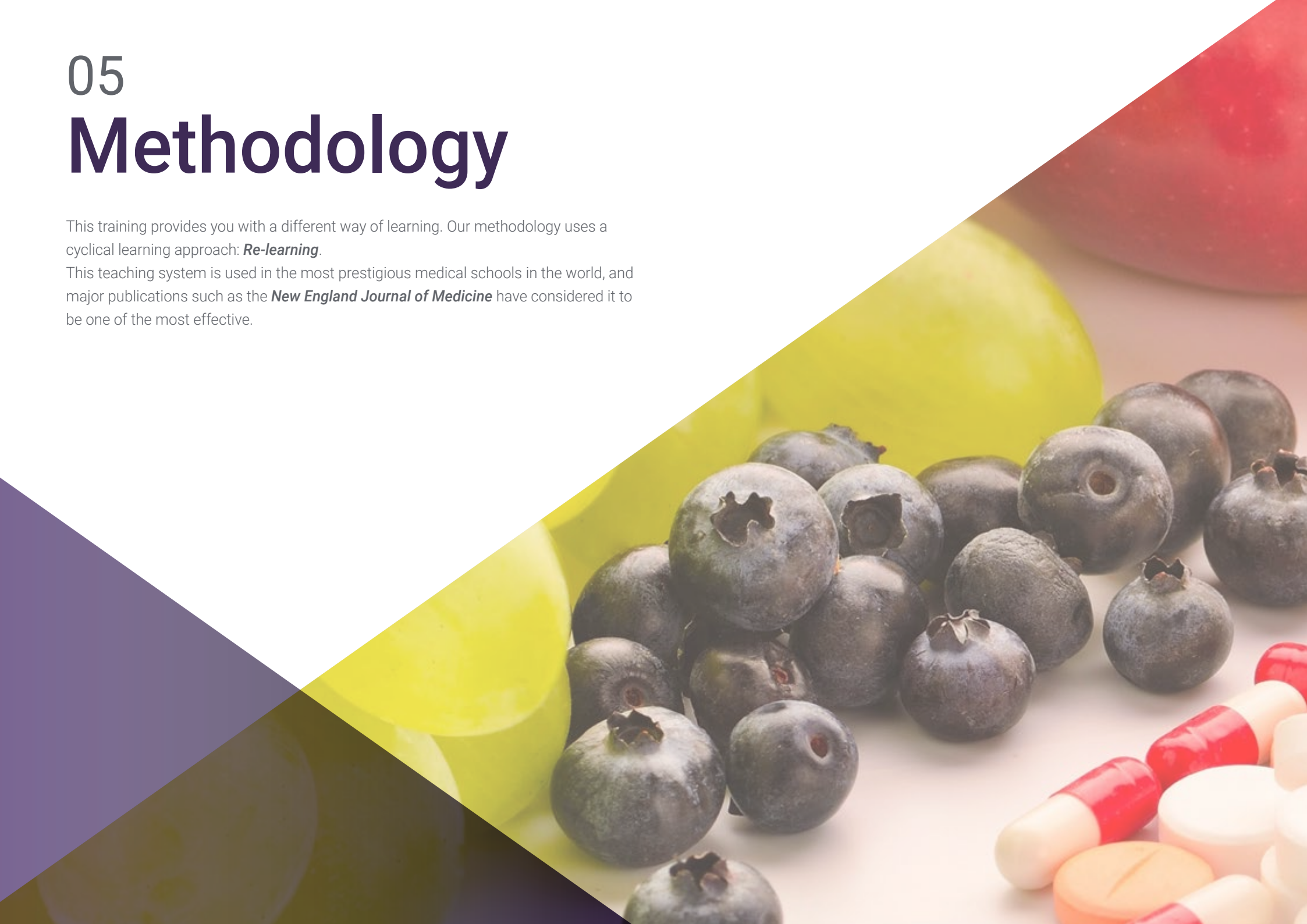
*A unique, key and decisive learning experience to boost your professional development”*

05

# Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used 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 Re-learning, 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

In a given clinical situation, what would you do? Throughout the program you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Nutritionists learn better, faster, and more sustainably over time.

*With TECH, nutritionists 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, trying to recreate the real conditions of professional nutritional 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. Nutritionists who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning is solidly focused on practical skills that allow the nutritionist to better integrate the knowledge into clinical practice.
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.



## Re-learning Methodology

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

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.

*The nutritionist 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have have trained more than 45,000 nutritionists with unprecedented success, in all clinical specialties regardless of the workload. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning 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 to success.*

In our program, learning is not a linear process, but rather a spiral (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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



In this program you will have access to the best educational material, prepared with you 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 really specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



### Nutrition Techniques and Procedures on Video

We introduce you to the latest techniques, the latest educational advances, and the forefront of current nutritional procedures and techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



### Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique training system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### Additional Reading

Recent articles, consensus documents, international guides... in our virtual library you will have access to everything you need to complete your training.





**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 & Re-Testing**

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



**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 our difficult future decisions.



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



# 06 Certificate

The **Postgraduate Certificate in Metabolomics** guarantees you, in addition to the most rigorous and up-to-date training, access to a Postgraduate Certificate qualification issued by **TECH Global University**.



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*Successfully complete this training program and receive your university certificate without travel or laborious paperwork”*

This program will allow you to obtain your **Postgraduate Certificate in Metabolomics** 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 Metabolomics**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper certificate 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 quality

online training

development languages

virtual classroom

**tech** global  
university

## Postgraduate Certificate Metabolomics

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

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