

# Postgraduate Certificate

## Graphical Representations of Data in Medical Research and other Advanced Analysis



## Postgraduate Certificate

### Graphical Representations of Data in Medical Research and other Advanced Analysis

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

Web access: [www.techtute.com/us/nutrition/postgraduate-certificate/graphical-representations-data-medical-research-advanced-analysis](http://www.techtute.com/us/nutrition/postgraduate-certificate/graphical-representations-data-medical-research-advanced-analysis)

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Certificate

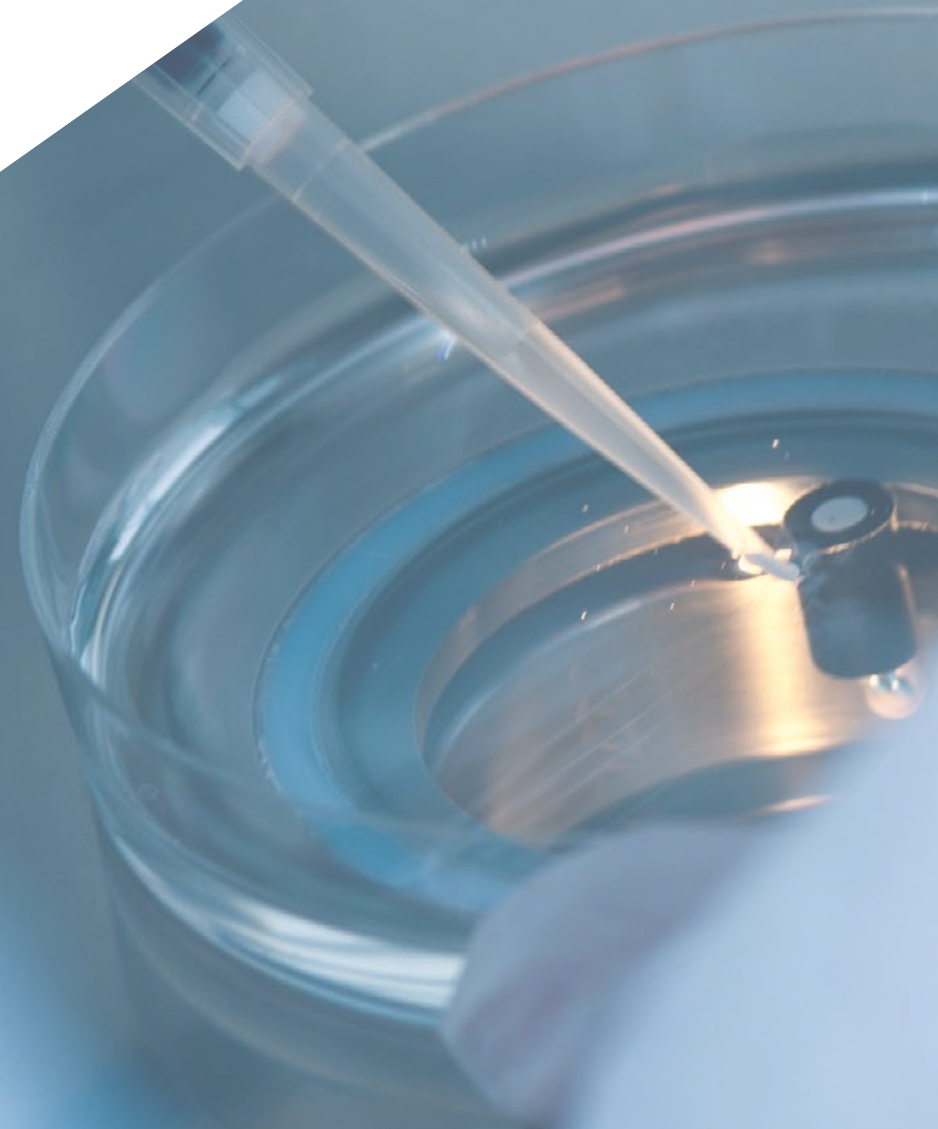
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# 01

# Introduction

To have a clear idea of the progress of an investigation, it is necessary to have graphic tools that easily and accurately show the information obtained, the relevant data and the steps to follow. It is for this reason that the nutrition professional must have the latest knowledge in graphic technology and audiovisual representations, so this program will update you on the visualization of research. To this end, you will learn in depth about the best platforms, tools and diagramming techniques, which will allow you to establish the progress of the project from the image. This is a 100% online degree, with downloadable material and without established schedules.



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*Do you want to know the best way to get up to date in your scientific projects? Then take this Postgraduate Certificate program and learn more about graphical representations of nutritional research of data"*

Any research project requires accurate, effective and reliable communication, since it involves many people working towards the same goal. Thus, sharing information from the different minds of the project is more than necessary, so in order to keep up to date it is necessary to find a practical way to communicate the progress and results obtained.

In this context, graphic representation arises, allowing from diagrams to illustrations or pieces in order to show the results, the development of the project and the significant progress. In short, a really effective way to visualize research in a much more intuitive and simple way.

That is why TECH has designed this Postgraduate Certificate in Graphical Representations of Data in Medical Research and other Advanced Analysis for professionals in the nutritional sector. This is so that they can delve into the existing communication techniques so that they can show existing communication techniques to show their advances to the rest of the research team and to society, always in a clear and concise manner once the project is published.

This is a 100% online program with highly advanced academic materials. Thus, the student will obtain a high level of preparation through a Postgraduate Certificate without pre-established schedules or transfers to face-to-face centers, so they will have the freedom to take it at the time they consider.

This **Postgraduate Certificate in Graphical Representations of Data in Medical Research and other Advanced Analysis** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of practical cases presented by experts in Scientific research
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the 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



*A degree designed to suit your needs, so you can be updated on the most advanced methods to reduce the dimensionality of data"*

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*TECH offers a dynamic way to incorporate the most up-to-date knowledge related to big data analytics into the nutrition profession"*

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.

*You will be able to get up to date on ROC Curves through innovative educational technologies.*

*6-week degree with the most comprehensive view on multiple regression types.*



# 02 Objectives

The aim of the program is to provide up-to-date information to the nutrition professional so that they can effectively, accurately and creatively share the information with fellow researchers, while presenting it in a way that is accessible to a wide audience. To this extent, the development of the project will move faster and relevant information will be published more efficiently. Nourished by dynamic material, this program is intended to be a solution to traditional methods of sharing data and analysis of nutrition research.







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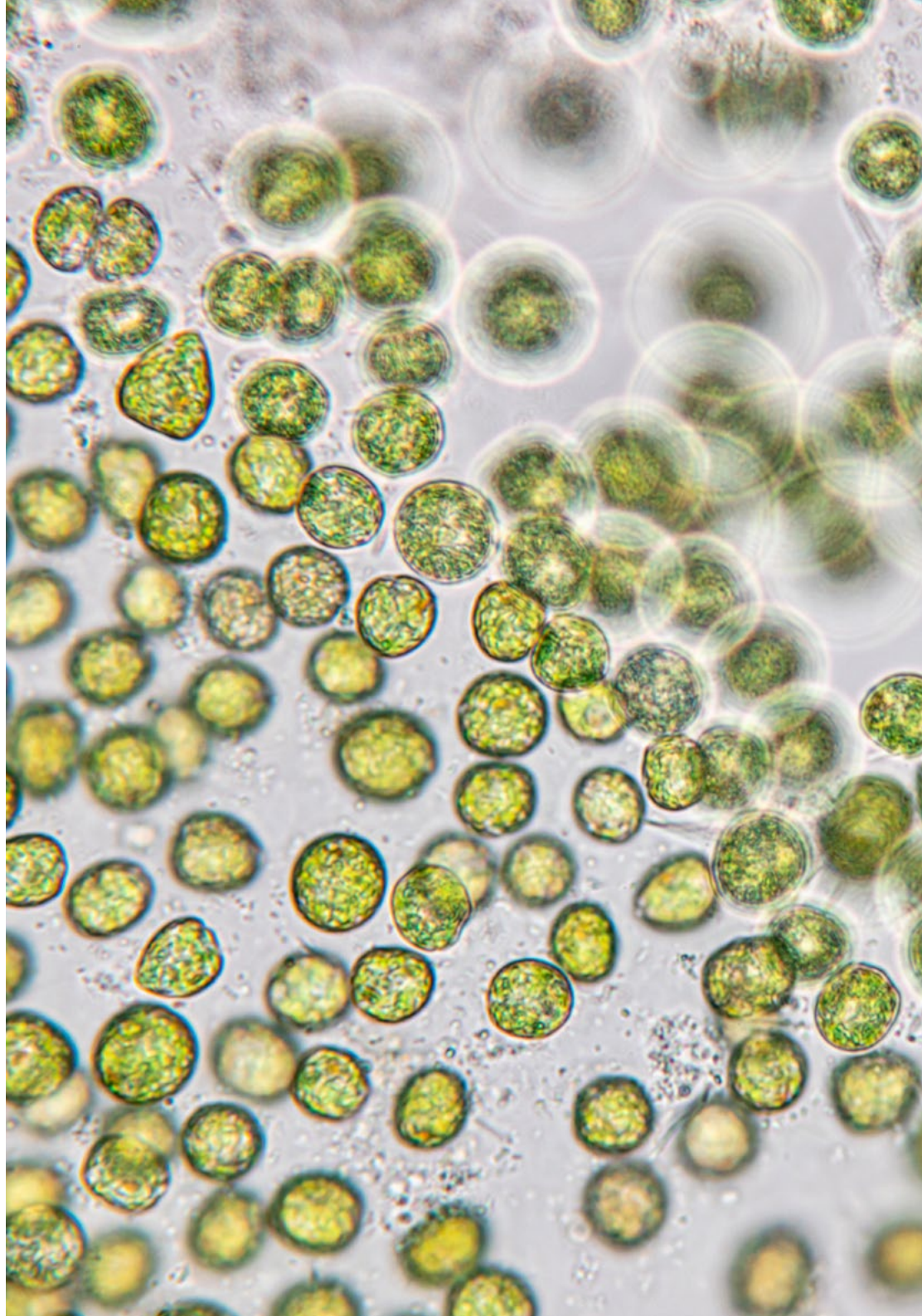
*Learn more about the most effective audiovisual tools and incorporate them into your work methodology to share nutritional data and advances”*



## General Objectives

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- ◆ Understand the appropriate approach to a question or problem to be solved
- ◆ Assess the state of the art of the problem through literature search
- ◆ Assess the feasibility of the potential project
- ◆ Study the drafting of a project in accordance with the different calls for proposals
- ◆ Examine the search for funding
- ◆ Master the necessary data analysis tools
- ◆ Writing scientific articles (papers) according to the target magazines
- ◆ Generate posters relevant to the topics addressed
- ◆ Know the tools for dissemination to the non-specialized public
- ◆ Delve into data protection
- ◆ Understand the transfer of knowledge generated to industry or the clinic
- ◆ Examine the current use of artificial intelligence and massive data analysis
- ◆ Study examples of successful projects





## Specific Objectives

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- ◆ Master the tools of computational statistics
- ◆ Learn to generate graphs for the visual interpretation of data obtained in research project
- ◆ Obtain in-depth knowledge of dimensionality reduction methods
- ◆ Delve into the comparison of methods

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*TECH is the place to be for you to update your skills in the research sector"*

03

# Course Management

In its commitment to the highest educational standards, TECH has selected for this occasion a first class teaching staff, made up of active professionals with extensive experience in the research sector. In addition, they have held important positions in scientific research in prestigious public hospitals. They are specialists who are characterized by their great human warmth, being involved in establishing a better relationship with the students and getting involved in their academic progress.





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*You will receive all the keys to the latest advances to illustrate complex scientific and nutritional information from experts who have held major research positions"*

## Management



### **Dr. López-Collazo, Eduardo**

- ♦ Scientific Deputy Director in the Institute for Health Research the Health Research Institute of La Paz University Hospital
- ♦ Head of the Department of Immune Response and Infectious Diseases at IdiPAZ
- ♦ Head of the Department of Immune Response, Tumors and Immunology at IdiPAZ
- ♦ President of the IdiPAZ Research Commission
- ♦ Sponsor of the External Scientific Committee of the Murcian Institute of Health Research
- ♦ Member of the Scientific Commission of FIDE
- ♦ Editor of the international scientific journal Mediators of Inflammation
- ♦ Editor of the international scientific journal "Frontiers of Immunology"
- ♦ Coordinator of IdiPAZ Platforms
- ♦ Coordinator of Health Research Funds in the areas of Cancer, Infectious Diseases and HIV
- ♦ PhD in Nuclear Physics, University of La Habana
- ♦ Doctorate in Pharmacy from the Complutense University of Madrid



## Professors

### Dr. Avendaño Ortiz, José

- ◆ Sara Borrell Researcher Foundation for Biomedical Research of the Ramón y Cajal University Hospital (FIBioHRC/IRyCIS)
- ◆ Researcher Foundation for Biomedical Research of La Paz University Hospital (FIBHULP/ IdiPAZ)
- ◆ Researcher HM Hospitals Foundation (FIHM)
- ◆ Graduate in Biomedical Sciences from the University of Lleida
- ◆ Master's Degree in pharmacological research from the Autonomous University of Madrid
- ◆ PhD in Pharmacology and Physiology from the Autonomous University of Madrid

### Dr. Pascual Iglesias, Alejandro

- ◆ Bioinformatics Platform Coordinator, La Paz Hospital
- ◆ Advisor to the COVID-19 Expert Committee of Extremadura
- ◆ Researcher in Eduardo López-Collazo's innate immune response research group, Instituto de Investigación Sanitarias University Hospital La Paz
- ◆ Researcher in the coronavirus research group of Luis Enjuanes, National Center of Biotechnology CNB-CSIC
- ◆ Coordinator of Continuing Education in Bioinformatics, Health Research Institute of the University Hospital La Paz
- ◆ Cum Laude Doctor in Molecular Biosciences from the Autonomous University of Madrid
- ◆ Degree in Biology Molecular from the University of Salamanca
- ◆ Professional Master's Degree in Cellular and Molecular Physiopathology and Pharmacology from the Universidad of Salamanca

03

# Structure and Content

TECH and its teaching staff have made available to the nutritionist the most innovative and comprehensive approach that can be found on the market. Not surprisingly, the experts have poured their advanced knowledge into resources presented in audiovisual materials, graphic pieces or complementary readings. This is an advantage for the student, since he or she will be able to delve deeper into complex concepts and delve into their correct development for the benefit of research.







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*Download the contents from the Virtual Campus and learn more about them by managing your own academic deadlines”*

**Module 1.** Graphical Representations of Data in Health Research and Other Advanced Analysis.

- 1.1. Types of Graphs
- 1.2. Survival Analysis
- 1.3. ROC Curves
- 1.4. Multivariate Analysis (Types of Multiple Regression)
- 1.5. Binary Regression Models
- 1.6. Massive Data Analysis
- 1.7. Dimensionality Reduction Methods
- 1.8. Comparison of Methods: PCA, PPCA and KPCA
- 1.9. T-SNE (t-Distributed Stochastic Stochastic Neighbor Embedding)
- 1.10. UMAP (Uniform Manifold Approximation and Projection)





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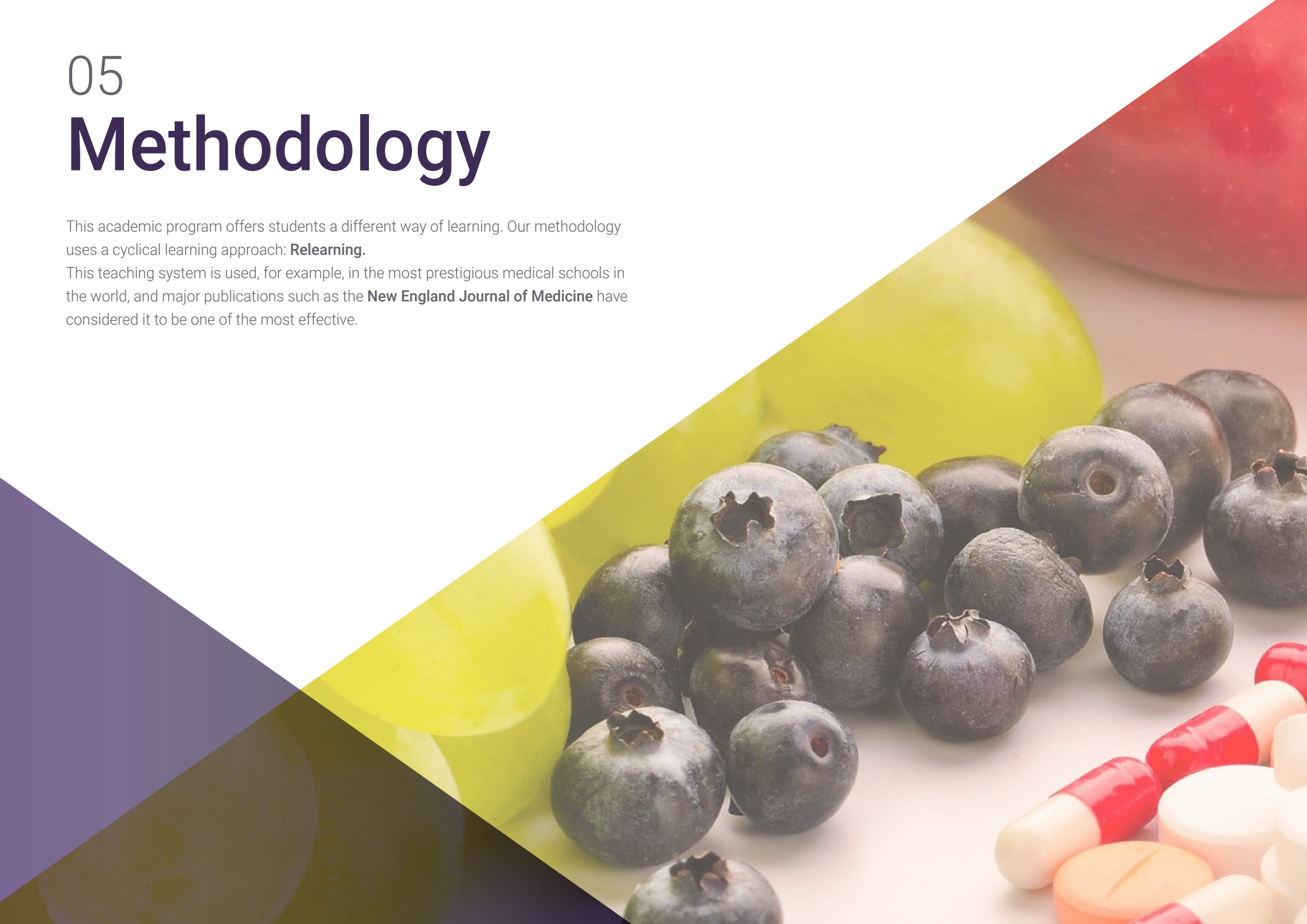
*Enroll now and join a unique curriculum to upgrade your skills by boosting the graphical representation of your research with remarkable results"*

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

In a given situation, what should a professional do? 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, 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 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 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 achieve the assimilation of concepts, but also a development of their mental capacity through exercises to evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the nutritionist to better integrate 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.



## 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.

*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 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 45,000 nutritionists have been trained with unprecedented success in all clinical specialties regardless of the surgical load. 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.*

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.



#### Nutrition Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current nutritional counselling techniques and procedures. 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 suggesting that observing third-party experts can be useful.

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.



# 05 Certificate

The Postgraduate Certificate in Graphical Representations of Data in Medical Research and other Advanced Analysis guarantees students, 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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*Complete successfully this program and receive your university degree without the hassle of travel or paperwork”*

This **Postgraduate Certificate in Graphical Representations of Data in Medical Research and other Advanced Analysis** contains the most complete and up-to-date scientific 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.

Program: **Postgraduate Certificate Graphical Representations of Data in Medical Research and other Advanced Analysis**

Official N° 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

**tech** technological  
university

personalized service innovation

knowledge present  
online training

development languages

virtual classroom

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of Data in Medical Research  
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- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

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