Postgraduate Certificate
Biostatistics with R

Postgraduate Certificate
Biostatistics with R

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

Website: **www.techtitute.com/us/nutrition/postgraduate-certificate/biostatistics-r**

Index

01
Introduction

Among the most important processes of nutritional research are the tabulation, classification and organization of information. In this way, Statistics manages in an organic way every detail of the project, which helps to identify in a periodic way the most relevant findings. This process, streamlined with the R system, is a great need for researchers in order to obtain faster results, so TECH has designed a program with which they can advance exponentially at each step. To this end, they will identify the main concepts of Biostatistics and the different methods of Biostatistics and the different regression methods, all in a 100% online way and with great flexibility.
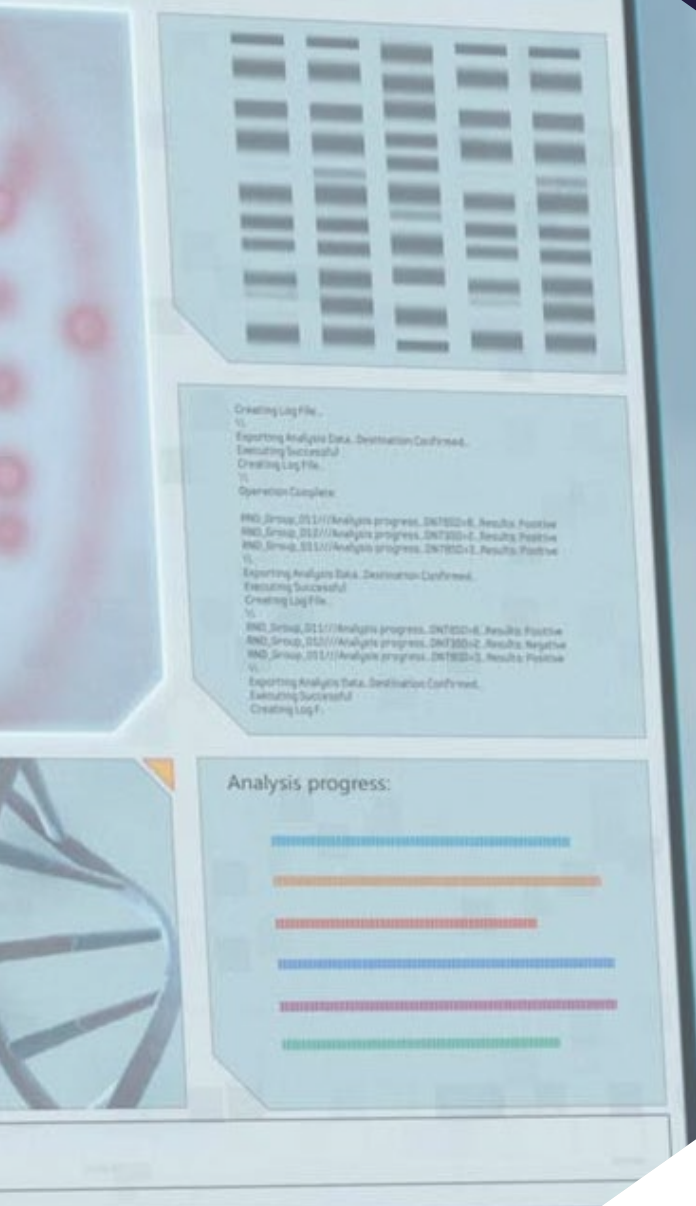
Get up-to-date on statistics applied to nutrition research with R and streamline your processes within the ongoing scientific project"

Within the framework of nutritional research, statistics play an important role, since the professionals tabulate the information and, in a detailed way, obtain the results of the tests performed. This process is essential for data collection and subsequent dissemination of the same within the work team, so that thanks to this technique, results can be achieved more quickly and efficiently.

To this extent, it is necessary that the nutrition professional delves into the latest knowledge of statistical processes, since they will be of vital importance in their research. This will make it easier to handle the enormous amount of information obtained from samples and experiments. And it is in this context that this program arises, which aims to provide an up-to-date view of the technique of R and to show recent advances in the field of Statistics.

Throughout the course, students will learn the main concepts of Biostatistics and the characteristics of the R program. Likewise, they will make an exhaustive approach to the regression method and multivariate analysis with R, describing also the statistical techniques of Data Mining.

This is a 100% online program, with no on-site classes or transfers to physical centers, so nutritionists only need to have a device with an Internet connection. This will allow them to accommodate their work routine with their personal commitments and the development of the Postgraduate Certificate.

This **Postgraduate Certificate in Biostatistics with R** 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 Biostatistics. with R
- 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 self-assessment can be used 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

Do you want to learn more about Biostatistics with R? Enroll in this Postgraduate certificate and identify the latest updates that will help you in your nutritional research"

"

A program designed to your needs with which you can update your research strategies to advance faster in your project"

You will master Multivariate Analysis with R and its multivariate data descriptions.

This qualification will meet your immediate needs, allowing you to handle advanced statistical techniques of 'Data Mining' with R.
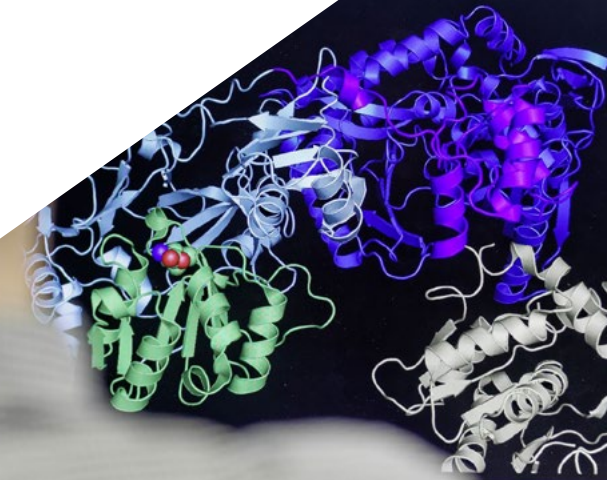
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 student will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Objectives

The main objective of TECH for this Postgraduate Certificate is to provide a range of advanced and up-to-date knowledge to the Nutrition professional about Statistics and its benefits for research advances. On the other hand, during the development of the program, students will examine the manipulation of the R tool for greater agility in the processes of tabulation, organization and classification of relevant data.

A qualification rich in relevant subjects whose objectives will give you a high level of preparation in the statistical techniques most commonly used in scientific research"

General Objectives

- Understand the appropriate approach to a question or problem to be solved

- Asses 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

- Write scientific articles (papers) for the daily 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

- Describe the main concepts of biostatistics
- Learn how to use the R program
- Define and understand the regression method and multivariate analysis with R
- Explore regression methods applied to research
- Recognize the concepts of statistics applied to research
- Describe the statistical techniques of data mining
- Provide knowledge of the most commonly used statistical techniques in biomedical research

A 100% online program, so you will not have to attend classes in person or sacrifice your activity as a nutritionist"

03

Course Management

In its desire to have the best specialists in the sector, TECH has selected for this Postgraduate Certificate a highly qualified teaching staff with extensive experience in the field of Biostatistics with R. These are active professionals who, from their specialized knowledge, will provide solutions to the doubts of nutritionists, providing them with the keys to the different processes of information management.

Enroll in this Postgraduate certificate and delve into the keys that will provide you with highly qualified experts in Biostatistics with R"

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 Inmune Response and Infectious Diseases at IdiPAZ
- Head of the Department of Inmune 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

Mr. Arnedo Abad, Luis

- Data Scientist & Analyst
- Data Scientist & Analyst Manager in Industrias Arnedo
- Data & Analyst Manager in Boustique Perfumes
- Data Scientist & Analyst Manager in Darecod
- Postgraduate Certificate in Statistics
- Psychology Graduate

04
Structure and Content

In its commitment to academic excellence, TECH, in close collaboration with the teaching team, has designed for this program an academic syllabus enriched with audiovisual and graphic material, practical exercises and complementary readings. In this way, nutrition professionals will obtain the best resources in order to advance more quickly in their research. In short, everything the nutritionist needs to get up to date in Statistics and R in scientific research with the best guarantees and under a comfortable online modality.

Access the Virtual Campus and learn more about the best techniques for your nutritional research through interactive diagrams, videos or case studies"

Module 1. Statistics and R in Health Research

1.1. Biostatistics

    1.1.1. Introduction to The Scientific Method

    1.1.2. Population and Sample. Sampling Measures of Centralization

    1.1.3. Discrete Distributions and Continuous Distributions

    1.1.4. General Outline of Statistical Inference. Inference about a Normal Population Mean. Inference about a General Population Mean

    1.1.5. Introduction to Nonparametric Inference

1.2. Introduction to R

    1.2.1. Basic Features of the Program

    1.2.2. Main Object Types

    1.2.3. Simple Examples of Simulation and Statistical Inference

    1.2.4. Graphs

    1.2.5. Introduction to R Programming

1.3. Regression Methods with R

    1.3.1. Regression Models

    1.3.2. Variable Selection

    1.3.3. Model Diagnosis

    1.3.4. Treatment of Outliers

    1.3.5. Regression Analysis

1.4. Multivariate Analysis with R

    1.4.1. Description of Multivariate Data

    1.4.2. Multivariate Distributions

    1.4.3. Dimension Reduction

    1.4.4. Unsupervised Classification: Cluster Analysis

    1.4.5. Supervised Classification: Discriminant Analysis

1.5. Regression Methods for Research with R

    1.5.1. Generalized Linear Models (GLM): Poisson Regression and Negative Binomial Regression

    1.5.2. Generalized Linear Models (GLM): Logistic and Binomial Regressions

    1.5.3. Poisson and Negative Binomial Regression Inflated by Zeros

    1.5.4. Local Fits and Generalized Additive Models (GAMs)

   1.5.5. Generalized Mixed Models (GLMM) and Generalized Additive Mixed Models (GAMM)

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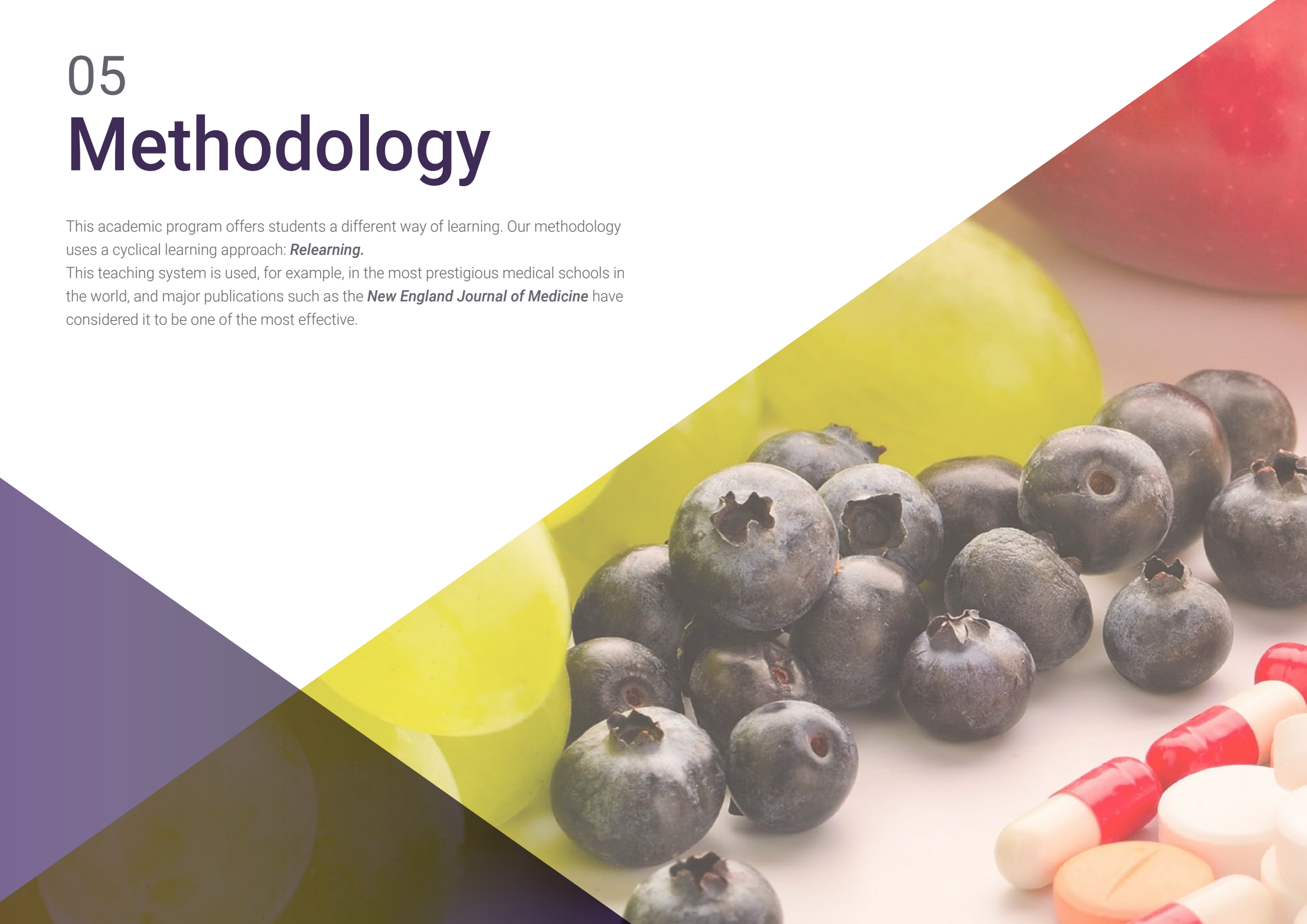
"
Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

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.

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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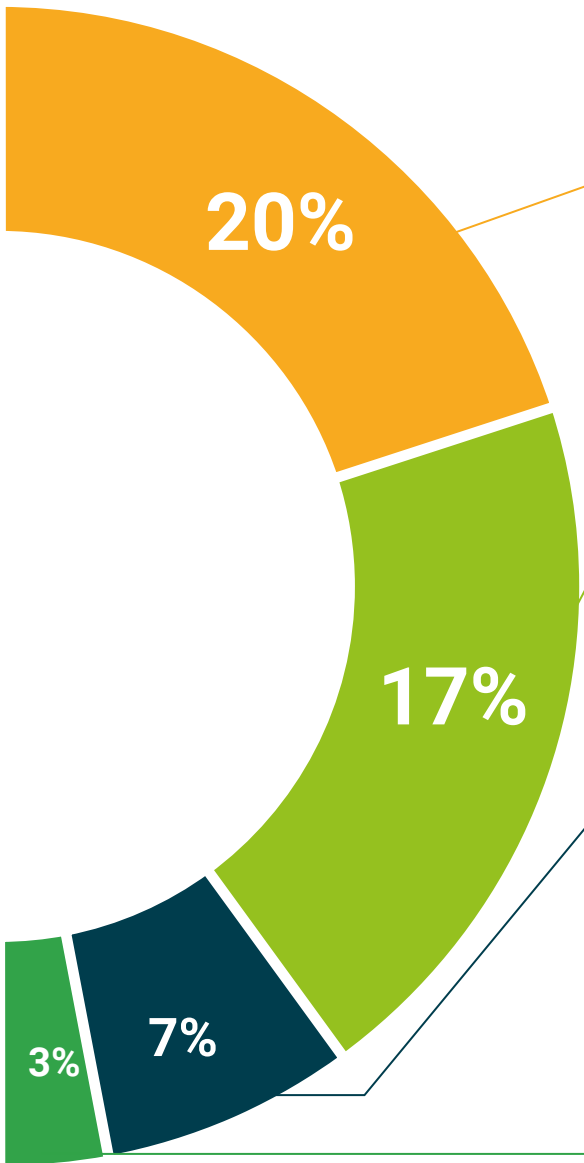
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

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.

20%

15%

15%

3%

20%

17%

7%

3%
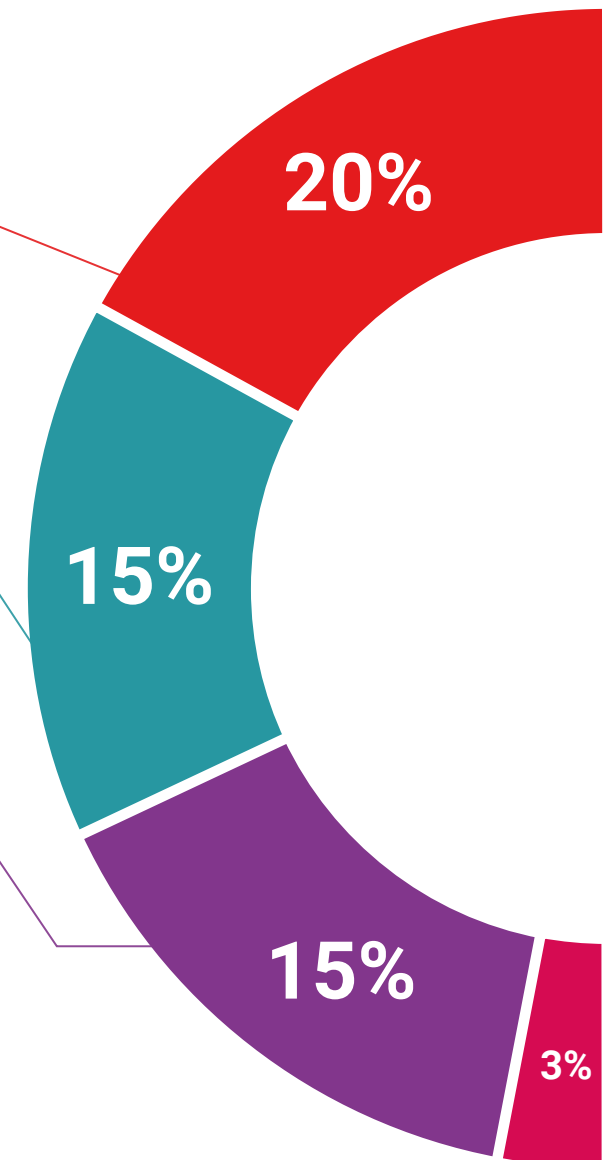
Expert-Led Case Studies and Case Analysis

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.

Certificate

The Postgraduate Certificate in Biostatistics with R 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 Biostatistics with R** 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.

Title: **Postgraduate Certificate in Biostatistics with R**

Official Nº of Hours: **150 h.**

tech technological university

Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Biostatistics with R

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

*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.

tech technological university

Postgraduate Certificate
Biostatistics with R

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

Postgraduate Certificate
Biostatistics with R

tech technological university