

# Postgraduate Certificate

Public Health Epidemiology Research  
Methodology for Nursing





## Postgraduate Certificate Public Health Epidemiology Research Methodology for Nursing

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

Website: [www.techtute.com/us/nursing/postgraduate-certificate/public-health-epidemiology-research-methodology-nursing](http://www.techtute.com/us/nursing/postgraduate-certificate/public-health-epidemiology-research-methodology-nursing)

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# 01

# Introduction

The World Health Organization estimates that millions of people suffer from preventable diseases, which highlights the importance of Public Health Epidemiology Research in addressing these problems. In this sense, nurses play a key role in the application of methodologies to understand these situations. However, to improve the health of the population, these professionals need to incorporate into their practice the most innovative tools to evaluate the effectiveness of health interventions, identify risk factors and understand the distribution of pathologies in society. To help them with this update, TECH presents a pioneering online university program that brings together the most cutting-edge techniques to optimize the quality of clinical practice.





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*Thanks to this 100% online Postgraduate Certificate, you will carry out high quality epidemiological studies and you will contribute to address important Public Health problems”*

Research in Epidemiology has become an essential aspect in understanding the determinants of health in the population, as well as in the formulation of effective Public Health policies and strategies. In this sense, nurses play an active role in the interpretation of the results of epidemiological studies. In this way, professionals can translate scientific findings into practical recommendations to improve patient care, develop effective public health policies and design health promotion interventions.

Within this framework, TECH has created a revolutionary and comprehensive program in Public Health Epidemiology Research Methodology for Nursing. The academic itinerary will delve into the Biostatistics taking into account aspects such as types of variables, identification of statistical tests or confounding factors. Likewise, the syllabus will provide graduates with the most effective computer software to carry out statistical analysis. In this way, graduates will develop skills to skillfully handle tools such as STATA® to analyze epidemiological data. In line with this, the program will delve into the different phases of qualitative research in Public Health. Therefore, nurses will be able to adequately identify the most appropriate qualitative methods to appreciate complex phenomena related to the welfare of the population.

On the other hand, the present university program is 100% online, providing professionals the necessary flexibility to adapt to their schedules. In addition, TECH's exclusive Relearning system will provide nurses with an effective and rigorous update. In this line, the only thing graduates will need is an electronic device with Internet access to enter the Virtual Campus. In this way, professionals will have at their disposal a wide range of resources in different formats to enjoy dynamic and enjoyable learning. These include case studies, explanatory videos and interactive summaries.

This **Postgraduate Certificate in Public Health Epidemiology Research Methodology for Nursing** 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 Public Health and Health Management
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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



*You'll have the support of TECH, the largest online academic institution in the world, with the latest educational technology at your disposal"*

“Are you looking to implement in your practice the most innovative techniques of qualitative research applied to Public Health? Achieve it with this revolutionary program in only 150 hours”

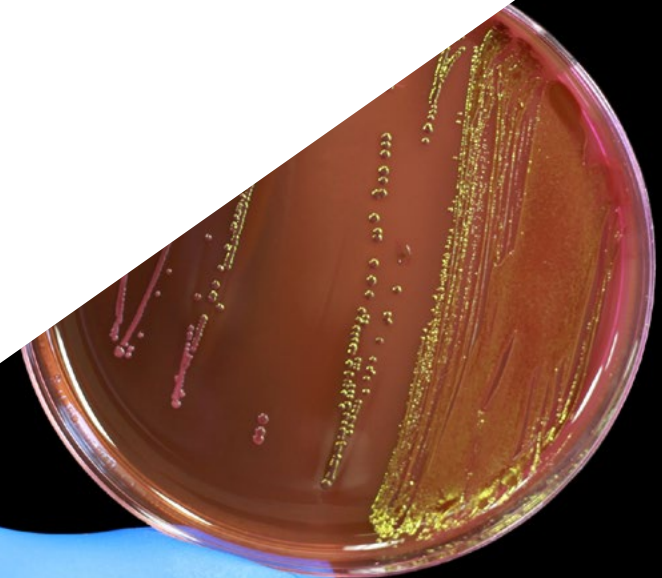
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will delve into Poisson Regression to identify risk factors associated with clinical care outcomes.

TECH's Relearning system will allow you to enjoy natural and progressive learning. Forget about memorizing!





02

# Objectives

Upon completion of this program, nurses will be characterized by their comprehensive knowledge of Public Health Epidemiology Research Methodology. In this sense, professionals will obtain advanced competencies to interpret the results of epidemiological analyses and communicate their findings clearly. In turn, graduates will be highly qualified to both identify and address disease risk factors, design and implement preventive interventions that contribute to the control of pathologies in the population.







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*You will develop advanced skills to accurately collect epidemiological data using appropriate sampling methods and specialized software”*



## General Objectives

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- ♦ Develop a broad and comprehensive conceptual framework of the situation, challenges and needs of Public Health in the 21st century
- ♦ Examine the international and global framework of Public Health policies
- ♦ Determine the key factors for a correct communication in health crisis: crisis communication and communication crisis
- ♦ Identify the theoretical and methodological framework for evaluation in Public Health
- ♦ Identify the steps to be followed for disease assessment using epidemiological data
- ♦ Compile the research methodology related to disease surveillance
- ♦ Identify the main risk and protective factors in communicable and non-communicable diseases
- ♦ Analyze the importance of quality assessment of intervention studies
- ♦ Develop the fundamentals of clinical epidemiology, measurement of frequency and distribution of diseases
- ♦ Critically evaluate the efficacy and effectiveness of clinical interventions, pharmacological treatments, surgical interventions and prevention strategies
- ♦ Fundamentals of the principles of the epidemiological method
- ♦ Fundamentals of the principles of health promotion, social determinants of health, health-related behavioral theories, and strategies to promote healthy lifestyles and environments
- ♦ Analyze the main health risks for different vulnerable groups
- ♦ Implement a holistic and integrative vision in the impact assessment of environmental risks on health protection





## Specific Objectives

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- ♦ Determine the main univariate statistical techniques
- ♦ Differentiate between univariate and multivariate analyses
- ♦ Develop the main multivariate techniques
- ♦ Calculate incidence and prevalence
- ♦ Establish statistical packages for data analysis
- ♦ Apply qualitative methodology
- ♦ Design qualitative research
- ♦ Conduct health study designs
- ♦ Analyze and interpret results
- ♦ Use ethical principles in epidemiological research

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*You will achieve your objectives with the help of TECH's didactic tools, among which are including explanatory videos, case studies and interactive summaries"*



03

# Course Management

TECH's main premise is to provide the most complete and renewed university programs in the academic panorama. For this reason, it carries out a meticulous process to constitute its teaching staff. Thanks to this, the present Postgraduate Certificate counts with the participation of distinguished professionals in Public Health Epidemiology Research Methodology. These specialists pour their years of work experience into the didactic materials, which guarantees that they stand out for their quality and adaptation to the requirements of today's labor market.







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*You will have the support of a teaching staff made up of distinguished professionals in Public Health”*

## Management



### Ms. Ruiz Redondo, Julia María

- ◆ Coordinator of the National Working Group on Public Health 2.0 in the SEMG
- ◆ Coordinator of the General Directorate of Public Health in the Ministry of Health of Castilla-La Mancha
- ◆ Coordinator of the Regional Advisory Group on Immunization at the Regional Ministry of Health of Castilla-La Mancha
- ◆ Nurse Inspector in the Management of Coordination and Inspection of Castilla-La Mancha in the SESCAM
- ◆ Nurse of Specialized Care in the Hospital Emergency Area at the General Hospital of Tomelloso
- ◆ Master's Degree in Medical Management and Clinical Management by the UNED, ISCIII, National School of Health
- ◆ Master's Degree in Vaccines from the Catholic University of San Antonio de Murcia
- ◆ Master's Degree in Specialized Emergency Nursing Care, Critical Patient Area and Post-Anesthesia Care by the University of Valencia
- ◆ Master's Degree in Nursing Services Management from the UNED
- ◆ Senior Healthcare Management Program from San Telmo Business School
- ◆ Graduate in Nursing from the Catholic University of Avila
- ◆ Diploma in Nursing from the University of Jaén

## Professors

### Dr. Losada Salamanca, Diana Carolina

- ♦ Palliative Medicine Physician, Palliative Care Unit at Hospital Virgen de la Luz
- ♦ Emergency Physician at the Hospital Virgen de la Luz
- ♦ Master's Degree in Bioethics by the Catholic University of Valencia
- ♦ Master's Degree in Palliative Care for Medicine by the CEU Cardenal Herrera
- ♦ Expert in Individualized Palliative Care for Medicine
- ♦ Expert in Clinical Management of the Palliative Care Patient For Medicine
- ♦ Expert in Psychosocial Aspects in the Palliative Patient For Medicine
- ♦ Medical Specialist in Family and Community Medicine (2020)
- ♦ Degree in Medicine and Surgery from the Pontifical Javeriana University

### Dr. Silva Contreras, Javier

- ♦ Head of the Preventive Medicine Service of the Virgen de la Luz Hospital
- ♦ Master's Degree in Public Health and Healthcare Management, University of Valencia
- ♦ Master's Degree in Infectious Diseases and Antimicrobial Treatment by the Cardenal Herrera University
- ♦ Specialist in Vaccines by the University of Santiago de Compostela
- ♦ Specialist in Nosocomial Infections by the EUROINNOVA Postgraduate Training Center
- ♦ Specialist Doctor in Preventive Medicine and Public Health
- ♦ Degree in Medicine and Surgery from the Pontifical Javeriana University



*Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"*

04

# Structure and Content

Through this program, nurses will have a thorough understanding of the fundamentals of Public Health Epidemiology Research Methodology. The syllabus will analyze in detail the main models in multivariate dependency statistics, allowing graduates to personalize the care of each patient. Likewise, the syllabus will delve into the interpretation of results through the digital analysis of qualitative data. Therefore, nurses will acquire advanced skills to handle text analysis software. In addition, the program will delve into the ethical principles of research in Public Health research and international regulations.







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*You will be able to use the evidence generated by epidemiological research to formulate health policies aimed at disease prevention in the community”*

## Module 1. Research Methodology in Epidemiology

- 1.1. Biostatistics: Univariate, Bivariate and Multivariate Analysis
  - 1.1.1. Types of Variables
  - 1.1.2. Normality Study of a Distribution. Parametric and non-parametric
  - 1.1.3. Dependent and Independent Variables. Confounding Factors
  - 1.1.4. Identification of the Necessary Statistical Tests
- 1.2. Models and Methods in Multivariate Statistics of Dependence and Interdependence: Statistical Inference Standardization and Prediction Multiple Linear Regression Regression and Cluster Analysis
  - 1.2.1. Multivariate Models
  - 1.2.2. Multivariate Models: Multiple Linear Regression
  - 1.2.3. Cluster Analysis
- 1.3. Models and Methods in Multivariate Structural Statistics: Logistic Regression, Poisson Regression, Survival Analysis and Longitudinal Data. Kaplan-Meier and Log-Rank Statistics
  - 1.3.1. Multivariate Models: Logistic Regression
  - 1.3.2. Kaplan-Meier and Log-Rank Survival Analysis
  - 1.3.3. Poisson Regression
- 1.4. Incidence and Prevalence Models in Public Health
  - 1.4.1. Incidence Studies
  - 1.4.2. Prevalence Studies
  - 1.4.3. Risk Analysis
- 1.5. Computer Software: Advanced Statistical Analysis with SPSS Package
  - 1.5.1. Statistical Packages: R®, STATA® and Epidat®
  - 1.5.2. Use of the SPSS® Package
  - 1.5.3. Interpretation of the Results of Statistical Analysis Performed by SPSS® and Evidence-based Decision Making
  - 1.5.4. Effective Communication of Statistical Findings to Specialized and Non-Specialized Audiences
- 1.6. Qualitative Methodology Applied to Public Health: Theoretical, Conceptual, and Ethical Aspects





- 1.6.1. Qualitative Evaluation Applied to Public Health
- 1.6.2. Techniques of Qualitative Research Applied to Public Health
- 1.6.3. Collection, Analysis and Interpretation of Qualitative Data in Public Health Studies: Validity, Reliability and Generalization of the Results
- 1.6.4. Ethical Principles: Protection of Participants' Confidentiality and Management of Potential Ethical Conflicts
- 1.6.5. Integration of the Qualitative Perspective in the Planning, Implementation, and Evaluation of Public Health Programs and Policies: Design of Effective Interventions Focused on the Needs of the Population
- 1.7. Design and Phases of Qualitative Research in Public Health. Sampling Designs
  - 1.7.1. Design and Phases of Qualitative Research
  - 1.7.2. Sampling
  - 1.7.3. Elaboration and Justification of the Data Collection Instruments
  - 1.7.4. Data Analysis Process
  - 1.7.5. Establishment and Justification of the Validity and Reliability Criteria of the Investigation
  - 1.7.6. Design and Justification of the Plan for Communication and Dissemination of the Results
- 1.8. Designs of Interest for Public Health Information Collection Techniques
  - 1.8.1. Sampling
  - 1.8.2. Surveys Survey Design
  - 1.8.3. Validation of Questionnaires
- 1.9. Analysis and Interpretation of Results Digital Analysis of Qualitative Data
  - 1.9.1. Text Analysis Software
  - 1.9.2. Data Visualization Software
  - 1.9.3. QDA (Qualitative Data Analysis) Software
  - 1.9.4. Artificial Intelligence applied to Qualitative Studies
- 1.10. Evaluation, Rigor and Ethics in Qualitative Research in Public Health
  - 1.10.1. Ethical Principles of Research
  - 1.10.2. International Legislation and Regulations
  - 1.10.3. Health Care Ethics Committee



# 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.





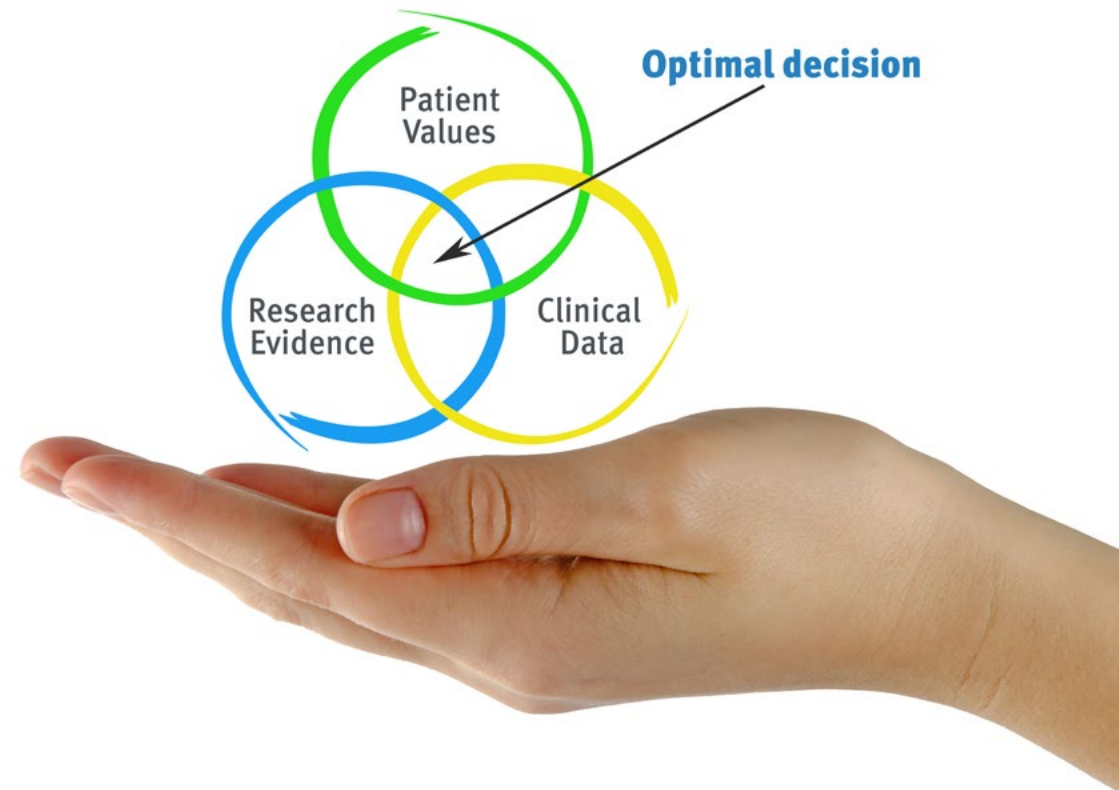
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH Nursing School 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. Nurses learn better, faster, and more sustainably over time.

*With TECH, nurses can experience a learning methodology 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, in an attempt to recreate the real conditions in professional nursing 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. Nurses 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 process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
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 case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.



*The nurse 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 we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. 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.

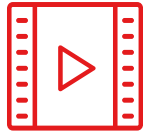
*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

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 really 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.



### Nursing Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, 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 them as many times as you want.



### Interactive Summaries

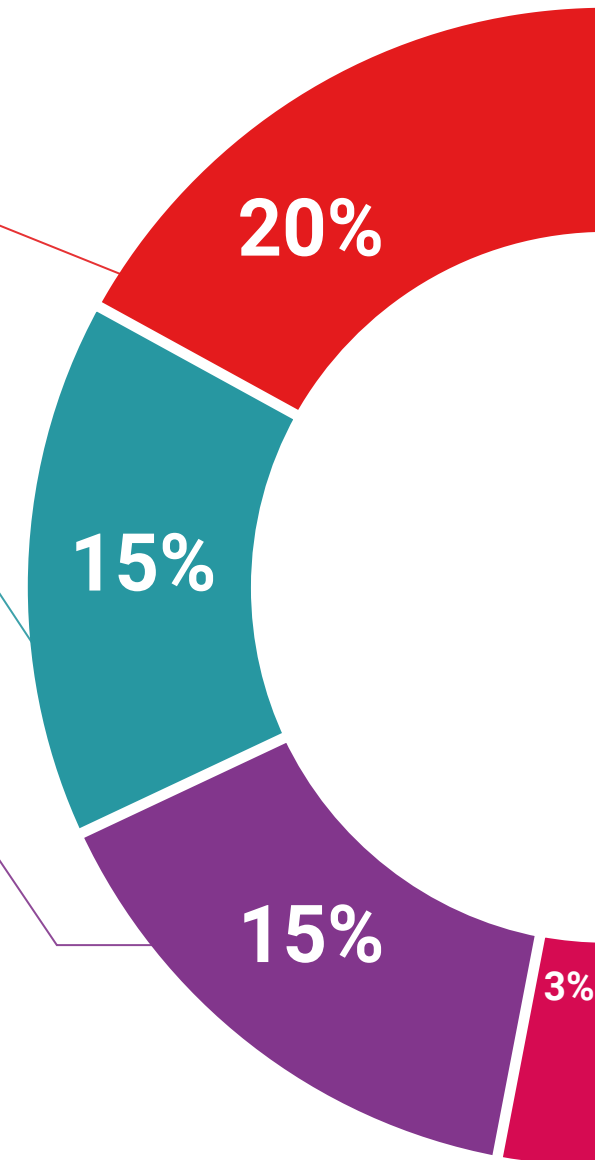
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

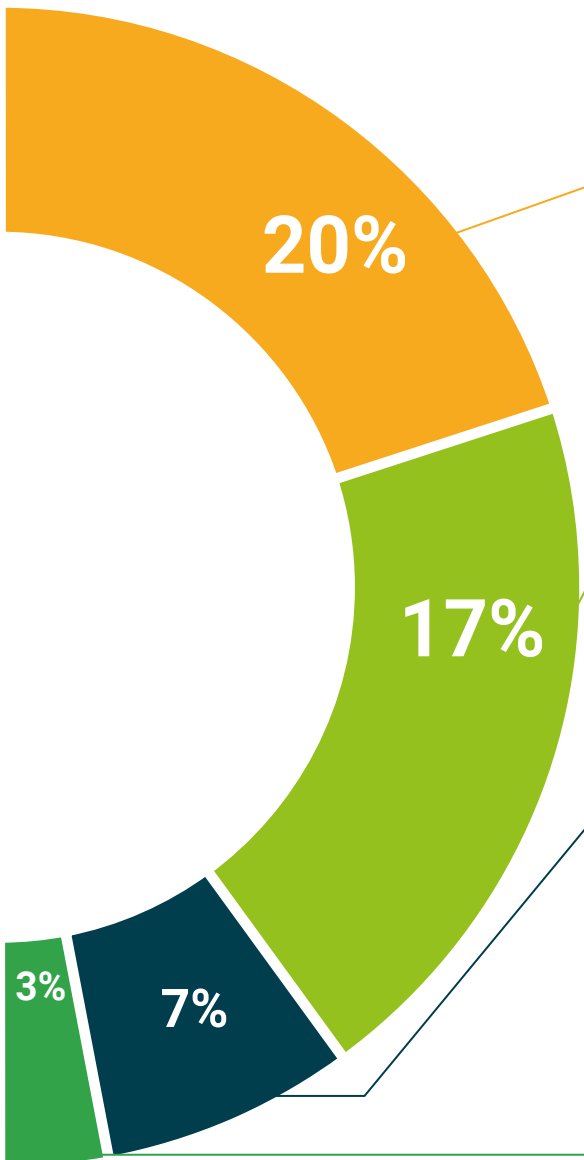
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### 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.





06

# Certificate

The Postgraduate Certificate in Public Health Epidemiology Research Methodology for Nursing guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.







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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This private qualification will allow you to obtain a **Postgraduate Certificate in Public Health Epidemiology Research Methodology for Nursing** 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** private qualification 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 Public Health Epidemiology Research Methodology for Nursing**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 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.



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