

Postgraduate Certificate

Research Methodology in Public
Health Epidemiology



Postgraduate Certificate Research Methodology in Public Health Epidemiology

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

Website: www.techtute.com/us/pharmacy/postgraduate-certificate/research-methodology-public-health-epidemiology

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01

Introduction

Epidemiological research provides a scientific basis for addressing public health problems and developing effective interventions to optimize population health. As professionals who are directly involved in patient care, it is essential that pharmacists have a high level of knowledge of epidemiological methods. In this way, professionals will be able to critically evaluate scientific evidence and apply it in clinical practice. This includes identifying risk factors for diseases, understanding the effectiveness of preventive interventions or making informed decisions to optimize patient treatment. In view of this, TECH presents an innovative university program focused on Research Methodology in Epidemiology. In addition, it is based on a convenient 100% online modality.





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Thanks to this 100% online Postgraduate Certificate, you will use epidemiological evidence to make informed decisions on the prevention, treatment and follow-up of diseases”

In a new report, the World Health Organization highlights the need to use sound epidemiological methods to understand both the distribution and determinants of disease in populations. In this regard, the organization recognizes that pharmacists play an important role in health promotion and disease prevention at the community level. Given this, Epidemiology Research Methodology is a valuable tool for professionals to understand health problems and implement interventions based on scientific evidence to address them.

Given this framework, TECH presents an innovative program in Research Methodology in Public Health Epidemiology. The academic itinerary will analyze Biostatistics in detail, taking into account issues such as types of variables, identification of statistical tests or confounding factors. At the same time, the syllabus will provide graduates with the most effective computer software to carry out statistical analysis. Thanks to this, pharmacists will develop competencies 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. In this way, professionals will adequately identify the most appropriate qualitative methods to appreciate complex phenomena related to the wellbeing of the population.

The program is based on the disruptive Relearning method promoted by TECH. This learning system consists of the reiteration of the most relevant contents, so that they are engraved in the students' memory in a progressive way. The curriculum will also offer various clinical case studies, which will allow pharmacists to get closer to the reality of clinical care. Along the same lines, graduates will have access at all times to a digital library full of audiovisual materials (explanatory videos, interactive summaries or infographics) and additional didactic materials such as complementary readings. This will enable them to consolidate their knowledge in a more dynamic way.

This **Postgraduate Certificate in Research Methodology in Public Health Epidemiology** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Development of practical case studies presented by experts in health sciences
- ♦ 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



You will broaden your knowledge by analyzing real cases and solving complex situations in simulated learning environments"

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You will deepen your understanding of the benefits of Artificial Intelligence in qualitative studies, among which the efficient analysis of large volumes of data stands out”

The program's teaching staff includes professionals from the industry who contribute their work experience to this 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 prepare for 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, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

Looking to handle the most cutting-edge QDA software? Achieve it with this program.

Thanks to TECH's characteristic Relearning system, you will learn at your own pace without depending on external teaching constraints.



02

Objectives

Upon completion of this program, pharmacists will have mastered the principles of epidemiology and its application in public health research. Likewise, professionals will acquire advanced skills to both design and implement epidemiological studies, including from the selection of the study population or data collection to statistical analysis. Furthermore, graduates will enhance their communication skills in order to transmit the findings of epidemiological research to different audiences. Thanks to this, they will contribute to the improvement of the quality of pharmaceutical care in a significant way.





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You will develop advanced skills to apply statistical analysis techniques to interpret the results of epidemiological studies”



General Objectives

- ♦ 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 proper health crisis communication: crisis communication and crisis of communication
- ♦ Identify the theoretical and methodological framework for Public Health evaluation
- ♦ 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 noncommunicable diseases
- ♦ Analyze the importance of assessing the quality 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
- ♦ Substantiate the principles of the epidemiological method
- ♦ Substantiate the health promotion principles, social determinants of health, health-related behavioral theories, and strategies to promote healthy lifestyles and health-promoting environments
- ♦ Analyze the main health risks for different vulnerable groups
- ♦ Implement a holistic and integrative vision in the assessment of the impact of environmental risks on health protection





Specific Objectives

- ◆ Determine the main univariate statistical techniques
- ◆ Differentiate univariate from multivariate analysis
- ◆ 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 enjoy the most innovative multimedia resources, with which you will enrich your learning and put what you have studied into practice in a simple way”

03

Course Management

This program has a first class teaching staff, made up of specialists in Research Methodology in Public Health Epidemiology. These professionals have an extensive professional background, where they have been part of recognized health entities. Thanks to this, these specialists have designed didactic materials defined by their excellent quality and full applicability to the demands of today's labor market. In this way, pharmacists will have access to a high-intensity academic experience that will optimize their daily practice and significantly raise their labor horizons.





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An excellent teaching team specialized in Research Methodology in Epidemiology provides you with a top-quality program"

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
- ◆ Specialized Care Nurse in the Hospital Emergency Area at the General Hospital of Tomelloso
- ◆ Master's Degree in Medical Management and Clinical Management by UNED, ISCIII, National School of Health
- ◆ Master's Degree in Vaccines from the Catholic University of Murcia
- ◆ Master's Degree in Specialized Emergency Nursing Care, Critical Care and Post-Anesthesia from the University of Valencia
- ◆ Master's Degree in Nursing Services Management from the UNED
- ◆ Senior Healthcare Management Program, San Telmo Business School
- ◆ Graduate in Nursing from the Catholic University of Ávila
- ◆ Diploma in Nursing from the University of Jaén

Professors

Dr. Losada Salamanca, Diana Carolina

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

Dr. Silva Contreras, Javier

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



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, pharmacists will be characterized by a solid knowledge of the fundamentals of Research Methodology in Public Health Epidemiology. The curriculum will delve into the multivariate statistical models of dependency, enabling graduates to provide highly personalized counseling based on the individual needs of users. The program will also provide pharmacists with the most advanced computer software to perform statistical analysis and interpret the results obtained. In addition, the didactic materials will analyze the ethical principles of Public Health research and international regulations.



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You will conduct epidemiological research to evaluate the efficacy and safety of drugs in the population, thus contributing to informed decision making on the use of drugs”

Module 1. Epidemiology Research Methodology

- 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 Statistics
 - 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 Analyses Performed by SPSS® and Evidence-Based Decision-Making
 - 1.5.4. Effective Communication of Statistical Findings to Specialized and Non-Specialized Audiences



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- 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: Protecting Participant Confidentiality and Managing Potential Ethical Conflicts
 - 1.6.5. Integration of the Qualitative Perspective in the Planning, Implementation, and Evaluation of Public Health Programs and Policies: Designing Effective Interventions Focused on the Population's Needs
 - 1.7. Design and Phases of Qualitative Research in Public Health. Sample Designs
 - 1.7.1. Design and Phases of Qualitative Research
 - 1.7.2. Sampling
 - 1.7.3. Elaboration and Justification of Data Collection Instruments
 - 1.7.4. Data Analysis Process
 - 1.7.5. Establishment and Justification of the Validity and Reliability Criteria of the Research
 - 1.7.6. Design and Justification of the Communication and Dissemination of Results Plan
 - 1.8. Designs of Interest for Public Health. Information Collection Techniques
 - 1.8.1. Sampling
 - 1.8.2. Surveys. Design of Surveys
 - 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. Healthcare Ethics Committees

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

What should a professional do in a given situation? Throughout the program, students will be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly 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. Gervas, 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, attempting to recreate the actual conditions in a pharmacist's professional 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. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their 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.

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.



Pharmacists 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 115,000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years.

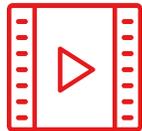
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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 created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

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.



Video Techniques and Procedures

TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



Interactive Summaries

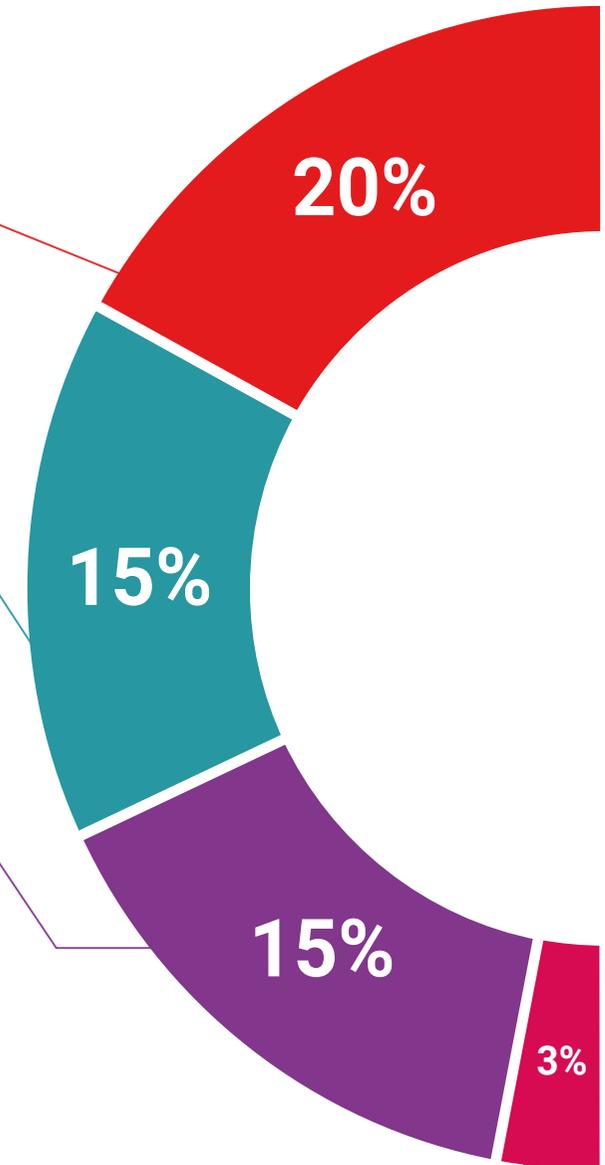
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

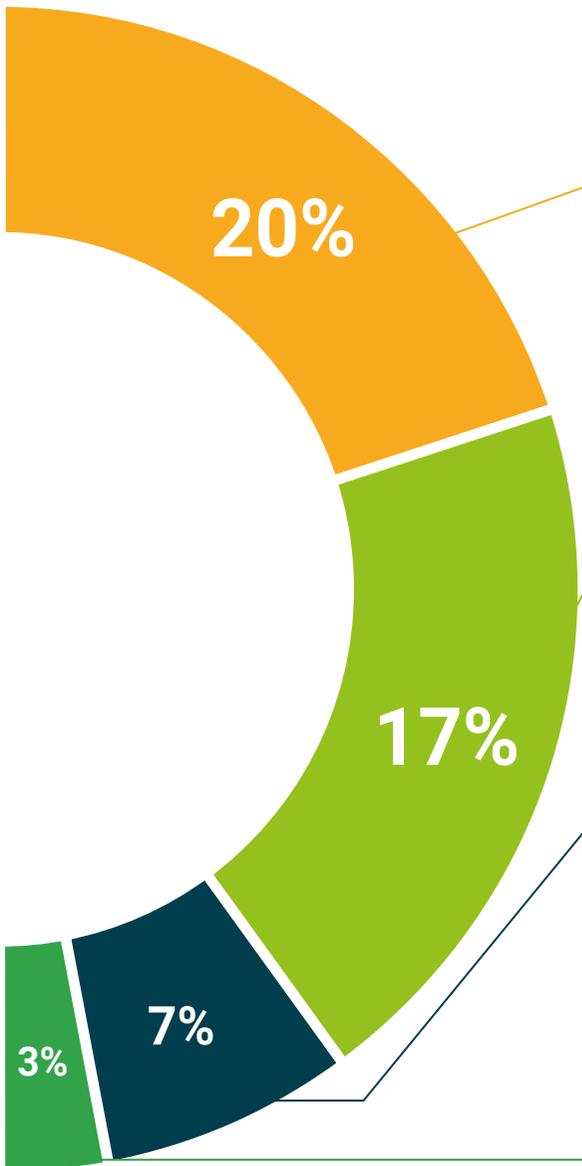
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



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, 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 & 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 Research Methodology in Public Health Epidemiology 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 Research Methodology in Public Health Epidemiology** 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 Research Methodology in Public Health Epidemiology**

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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Postgraduate Certificate

Research Methodology in Public
Health Epidemiology