

# Postgraduate Certificate Knowledge of Mathematics in Primary Education





## Postgraduate Certificate Knowledge of Mathematics in Primary Education

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

Website: [www.techtute.com/us/education/postgraduate-certificate/knowledge-mathematics-primary-education](http://www.techtute.com/us/education/postgraduate-certificate/knowledge-mathematics-primary-education)

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# 01

# Introduction

This program will allow teachers to rediscover the basic mathematical operations used in everyday life, numbers and their use in measuring time, lengths, geometric objects or statistical concepts, for example. And all this with a completely new and updated material that aims to train teachers to teach mathematics in primary school.





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*Encourage your students to study mathematics, a vital subject that they will be able to apply in everyday situations”*

The main objective of this program is to bring teachers closer to the study of mathematics in a formal way, trying to get into it always analyzing the experience and the perception they have throughout the development of the program. In this way, the program has an introductory character to the discipline of mathematics, with the intention that the student knows the perspective experienced as a student in his school stage and not only as a teacher. With this, it is intended to place the student in what will be the position of his future student, knowing mathematics from the practice of the content.

With this program, TECH has set out to train teachers to be fluent and accurate in the teaching of this educational stage. To this end, the order and distribution of the subjects and their topics is specially designed to allow students to decide their dedication and self-manage their time. Additionally, they will have at their disposal theoretical materials presented through enriched texts, multimedia presentations, exercises and guided practical activities, motivational videos, master classes and practical cases, where they will be able to evoke in an orderly way the knowledge and train the decision-making that demonstrates their training within the field of teaching.

This education is distinguished by the fact that it can be taken in a 100% online format, adapting to the needs and obligations of the student, in an asynchronous and completely self-manageable manner. The student will be able to choose which days, at what time and how much time to dedicate to the study of the contents of the program. Always in tune with the capabilities and skills dedicated to it.

This **Postgraduate Certificate in Knowledge of Mathematics in Primary Education** contains the most complete and up-to-date educational program on the market. The most important features include:

- ♦ The development of practical cases presented scenarios in simulated scenarios by experts in each area of study, where the student will effectively put their learning into practice and demonstrate skills acquisition
- ♦ 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
- ♦ The latest developments on the educational task of the primary school teacher
- ♦ Practical exercises where the students undergo the self-assessment process to improve learning, as well as activities at different skill levels
- ♦ Special emphasis on innovative methodologies and teaching research
- ♦ 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

“TECH provides you with the main educational tools to train you to develop your work in the field of teaching”

“

*Adapting the teaching of mathematics to the characteristics of primary school students is a fundamental task for teachers. If you want to specialize in this field, don't think twice and train with us”*

Its teaching staff includes professionals belonging to the field of Primary Education, who contribute their work experience to this education, 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 an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this purpose, the specialist will be assisted by an innovative interactive video system developed by renowned and experienced experts in diversity care.

*To access our content you only need to have a fixed or mobile device with an internet connection.*

*The program invites us to learn and grow, to develop as teachers, to learn tools and educational strategies in relation to the most common needs in our classrooms. in our classrooms.*



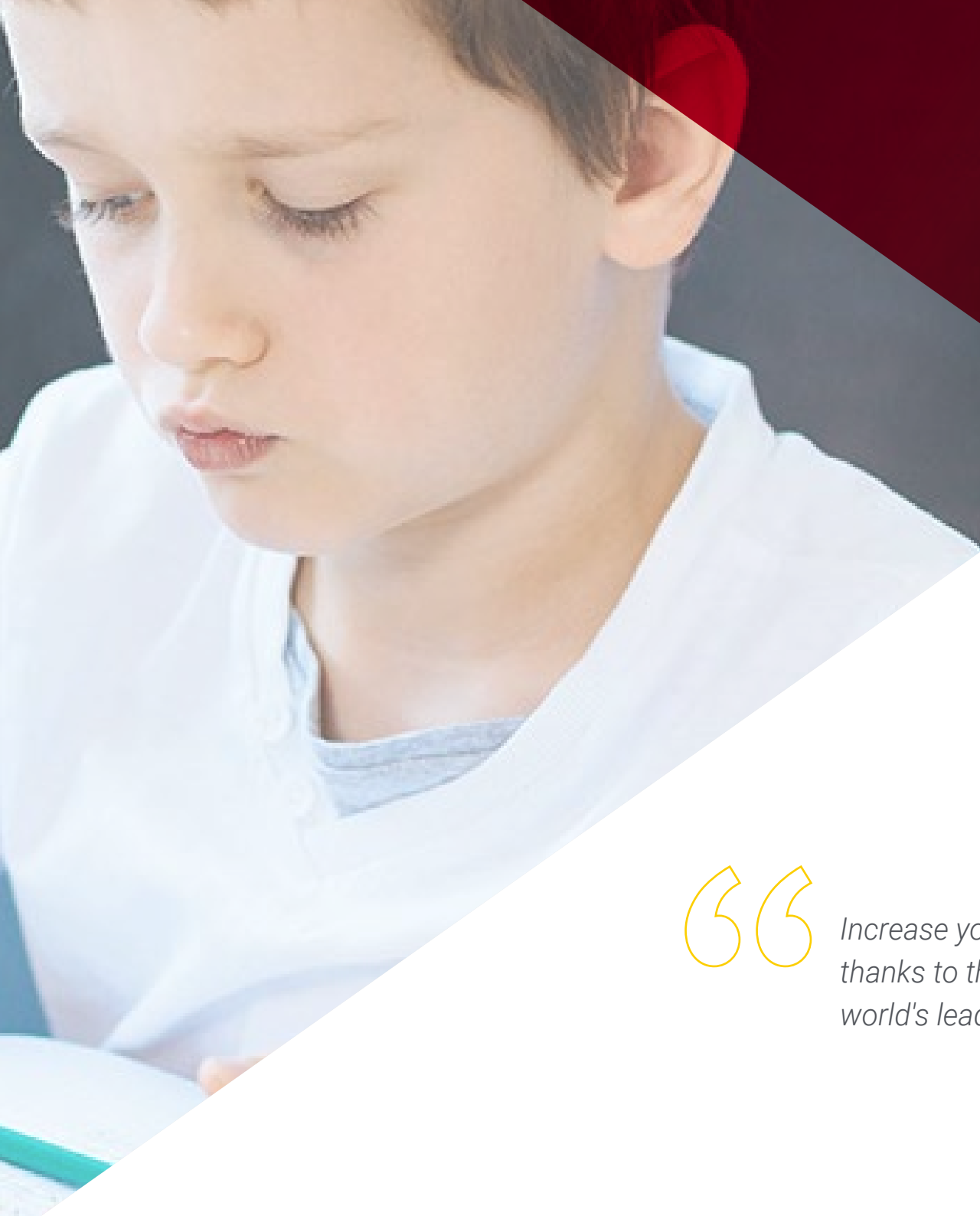
02

# Objectives

The Postgraduate Certificate in Knowledge of Mathematics in Primary Education is oriented to develop in students the skills required for the exercise of their profession. To this end, we offer you the most complete training from the leading experts in the field.







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*Increase your training as a primary school teacher thanks to the opportunity offered by TECH, the world's leading online university”*



## General Objectives

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- Design, plan, deliver and evaluate teaching and learning processes, both individually and in collaboration with other teachers and professionals of the center
- Recognize the importance of rules in all educational processes
- Promote participation and respect for the rules of coexistence

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*Our goal is to achieve academic excellence and to help you achieve it too”*





## Specific Objectives

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- ♦ Know and value the social and cultural importance of mathematics, as well as its role in the educational system
- ♦ Characterize the learning of schoolchildren at different ages based on the competencies to be developed from mathematics in Primary Education
- ♦ Interpret the role of error in learning mathematics
- ♦ Describe the main difficulties that may arise in the learning process of mathematics in primary education
- ♦ Pose and solve mathematical problems of different complexity
- ♦ Analyze different teaching strategies and techniques that promote the development of mathematical competence
- ♦ Know and use the usual material means and resources in the teaching of mathematics, with special attention to information and communication technologies

03

# Structure and Content

The structure of the contents has been designed by top level professionals within the educational panorama, with a wide trajectory and recognized prestige in the profession, endorsed by their experience, and with a wide command of the new technologies applied to teaching.





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*The best content to create the best teachers”*

**Module 1. Gain knowledge about Mathematics in Primary Education**

- 1.1. Mathematics and its History
  - 1.1.1. The Beginning of Mathematics from Prehistoric Times
  - 1.1.2. Mathematics Created by Great Names
  - 1.1.3. Problems to Understand the World
  - 1.1.4. Social and Cultural Importance
- 1.2. Mathematical Thinking
  - 1.2.1. Definition of Mathematical Thinking
  - 1.2.2. Characteristics and Components
  - 1.2.3. Mathematical Problem-Solving
  - 1.2.4. Mathematics is All Around Us
- 1.3. Natural Numbers and Integers
  - 1.3.1. Appearance of the Number
  - 1.3.2. Numbering Systems
  - 1.3.3. Operations with Natural Numbers
  - 1.3.4. Hierarchy of Operations
  - 1.3.5. Greatest Common Divisor and Least Common Multiple
  - 1.3.6. Patterns
  - 1.3.7. Problem Solving with Natural Numbers
  - 1.3.8. Meaning of Integers
  - 1.3.9. Operations with Integers
  - 1.3.10. Operations with Integers
- 1.4. Rational Number
  - 1.4.1. Meaning of Rational Numbers
  - 1.4.2. Fractions
  - 1.4.3. Equivalences of Fractions
  - 1.4.4. Order and Density of Fractions
  - 1.4.5. Operations with Rational Numbers
  - 1.4.6. Decimal Expressions
- 1.5. Irrational and Real Number
  - 1.5.1. Power
  - 1.5.2. Irrational Number
  - 1.5.3. Root
  - 1.5.4. Real Number





#### 1.6. Measurements

- 1.6.1. Concept of Magnitude and Types
- 1.6.2. Measurement of Magnitudes
- 1.6.3. Measurement Estimation. Errors
- 1.6.4. Measurement Unit Systems
- 1.6.5. Magnitudes and their Relationships

#### 1.7. Proportionality

- 1.7.1. Direct
- 1.7.2. Inverse
- 1.7.3. Rule of Three
- 1.7.4. Increase and Decrease of Percentages

#### 1.8. Plane and Space Geometry

- 1.8.1. Introduction: Origins of Geometry
- 1.8.2. Basic Elements and Vocabularies for the Development of Plane Geometry
- 1.8.3. Polygons. Triangles: Equality and Similarity of Triangles, Points and Remarkable Lines in a Triangle. Quadrilaterals
- 1.8.4. Circumference
- 1.8.5. A Little Bit of Geometry of Space: The Sphere and the Polyhedra

#### 1.9. Functions

- 1.9.1. Functions in Everyday Life
- 1.9.2. Dependence between Variables
- 1.9.3. Relationships by Tables, Graphs and Algebraic Expressions
- 1.9.4. Conception of Function. Properties
- 1.9.5. Elementary Functions: Direct, Affine and Constant Functions

#### 1.10. Statistics and Probability

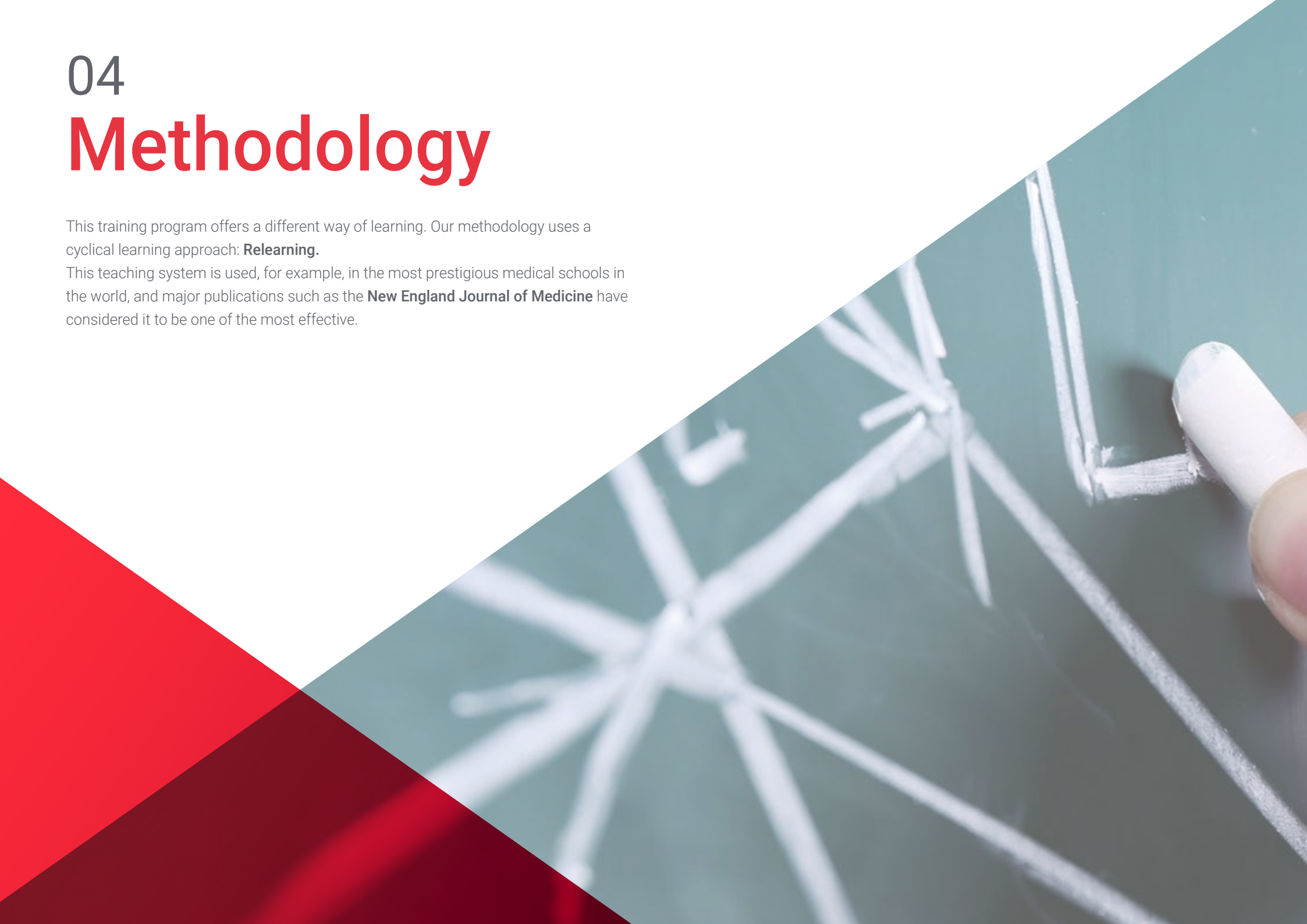
- 1.10.1. Meaning of Statistics
- 1.10.2. Basic Concepts: Population, Sample and Variable
- 1.10.3. Variables and their Types: Quantitative and Qualitative
- 1.10.4. Frequencies
- 1.10.5. Graphical Representations
- 1.10.6. Measures of Centralization and Dispersion
- 1.10.7. Study of Two Variables
- 1.10.8. Statistical Programs
- 1.10.9. Concept of Probability
- 1.10.10. Probability Theorem and Bayes' Theorem

04

# Methodology

This training program offers 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 Education School we use the Case Method

In a given situation, what should a professional do? Throughout the program students will be presented with multiple simulated cases based on real situations, where they will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method.

*With TECH, educators can experience a learning methodology that is shaking the foundations of traditional universities around the world.*



*It is a technique that develops critical skills and prepares educators to make decisions, defend their arguments, and contrast opinions.*

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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. Educators 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 is solidly focused on practical skills that allow educators to better integrate the knowledge into daily practice.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life teaching.
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 case studies 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.



*Educators 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 85,000 educators with unprecedented success in all specialties. 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 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 our 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 specialist educators 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.



#### Educational Techniques and Procedures on Video

TECH introduces students to the latest techniques, with the latest educational advances, and to the forefront of Education. All this, first-hand, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### Interactive Summaries

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 multimedia content presentation training Exclusive 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, 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 your goals.



**Classes**

There is scientific evidence suggesting that observing third-party experts can be useful.  
Learning from an Expert strengthens knowledge and memory, and generates confidence in 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 Knowledge of Mathematics in Primary Education 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 program will allow you to obtain your **Postgraduate Certificate in Knowledge of Mathematics in Primary Education** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

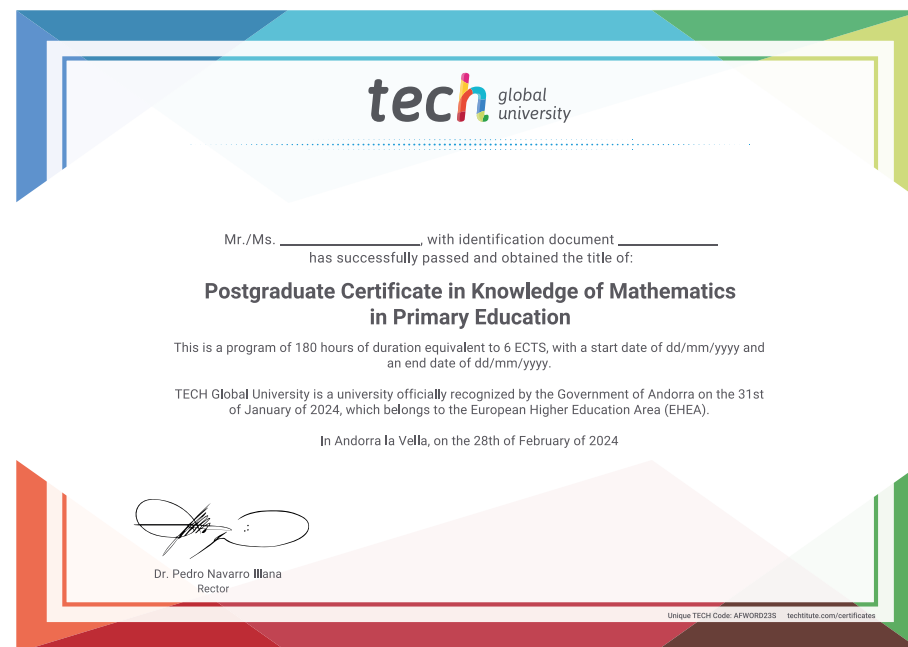
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Knowledge of Mathematics in Primary Education**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





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- » Modality: online
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- » Exams: online

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