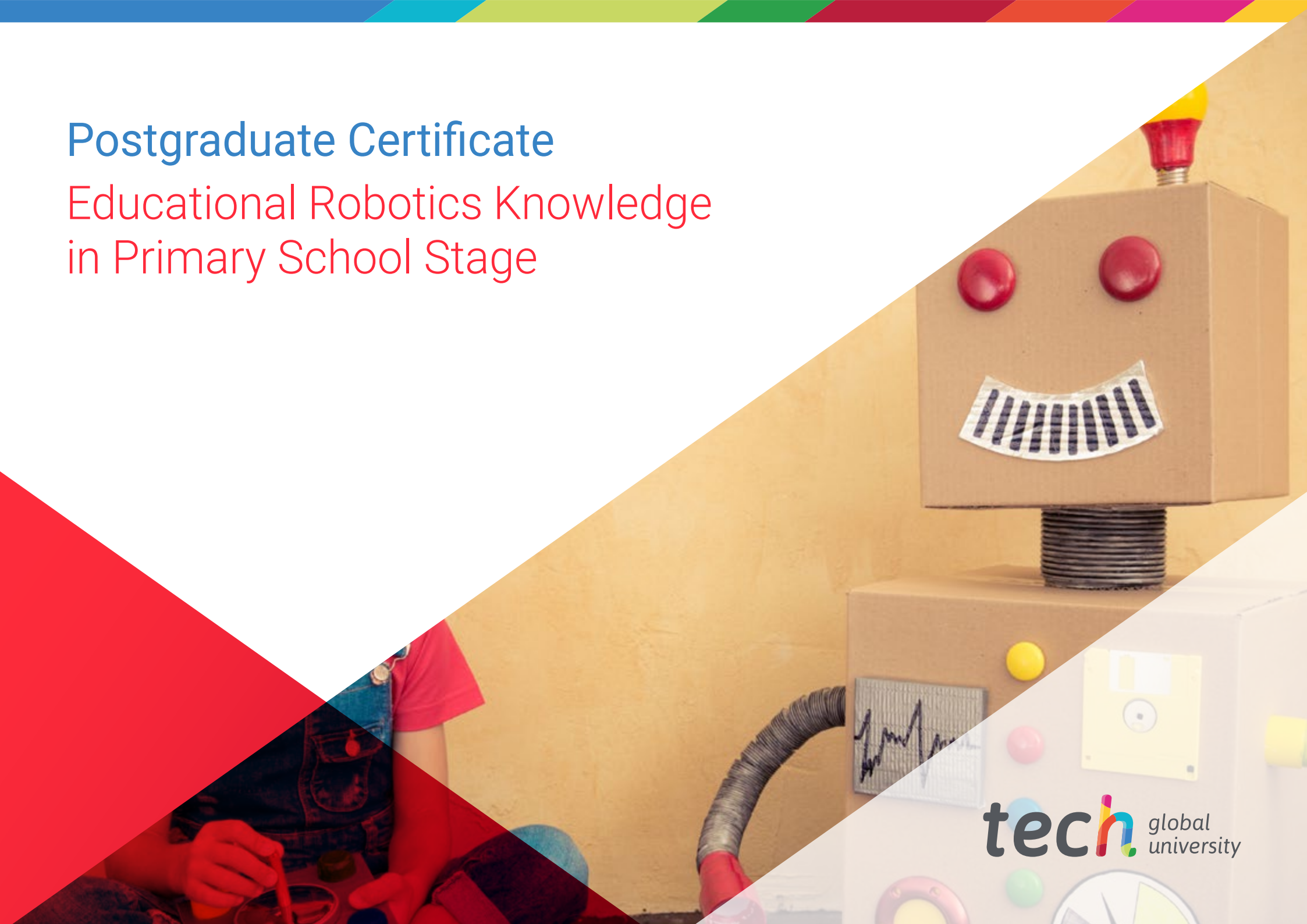


# Postgraduate Certificate Educational Robotics Knowledge in Primary School Stage





## Postgraduate Certificate Educational Robotics Knowledge in Primary School Stage

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 7 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/education/postgraduate-certificate/educational-robotics-knowledge-primary-school-stage](http://www.techtute.com/us/education/postgraduate-certificate/educational-robotics-knowledge-primary-school-stage)

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# 01

# Introduction

Nowadays, the planet is clearly immersed in a world of new technologies, which are advancing in giant steps, and we not only live with them to communicate with each other, but we also work with them. Within the education world, children coexist with new technologies, we use digital boards, blogs, projectors, etc., and we are in the age of information, where technology is immersed in our daily and school life.





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*This Postgraduate Certificate in Educational Robotics Knowledge in Primary School Stage will generate a sense of security in the performance of your profession, which will help you grow personally and professionally"*

Therefore, teachers have a great role to play in this sector, since we are preparing children to face tomorrow's society and the jobs they will have in the future.

For this reason we consider Educational Robotics as an innovative and ideal tool to promote the development of skills or competencies through the resolution of small challenges, using it as a medium. As Ruíz-Velasco said, "we don't want to focus on a theoretical-practical study of robots, nor just play with robotics, but what we want is that through robotics we allow the integration of different areas of knowledge to acquire general skills", such as being decisive, tolerating frustration more, being resilient, being more creative and able to find the best solution to any challenge, or simply to develop critical thinking in them.

With this Postgraduate Certificate in Educational Robotics Knowledge in Primary School Stage what we want to achieve is that apart from having knowledge about the world of Educational Robotics and Programming, we want to take advantage of the multidisciplinary accessibility that compose it, to activate cognitive processes in students and above all to develop a more meaningful learning, being themselves the protagonists of this process. Robotics today is considered one of the best learning tools to be introduced into classrooms, since it is presented in a practical way to develop innovative projects that allow the development of skills and competencies of students.

Therefore, this Postgraduate Certificate in Educational Robotics Knowledge in Primary School Stage has been designed with the concern to establish learning guidelines, new technological and pedagogical knowledge for the program to enable teachers, educators or teaching professionals, so that they will be generators of a change in the education of our children, who will undoubtedly be the society of tomorrow.

The program in Educational Robotics Knowledge in Primary School Stage aims to be a means to provide the teacher with various tools to help the motivation and learning of students, to be a generator of a new profile of the teacher of the XXI century.

It is a completely practical teaching program, presenting the students with challenges that they can later apply in their classrooms.

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

- ♦ Development of a large number of case studies presented by experts in educational robotics in primary education
- ♦ 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
- ♦ News about educational robotics
- ♦ It contains practical exercises where the self-evaluation process can be carried out to improve learning
- ♦ With special emphasis on innovative methodologies in educational robotics
- ♦ All this will be complemented by 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



*Update your knowledge through the Postgraduate Certificate program in Educational Robotics Knowledge in Primary School Stage"*

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*This Postgraduate Certificate may be the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge in educational robotics in primary education, you will obtain a Postgraduate Certificate from TECH Global University"*

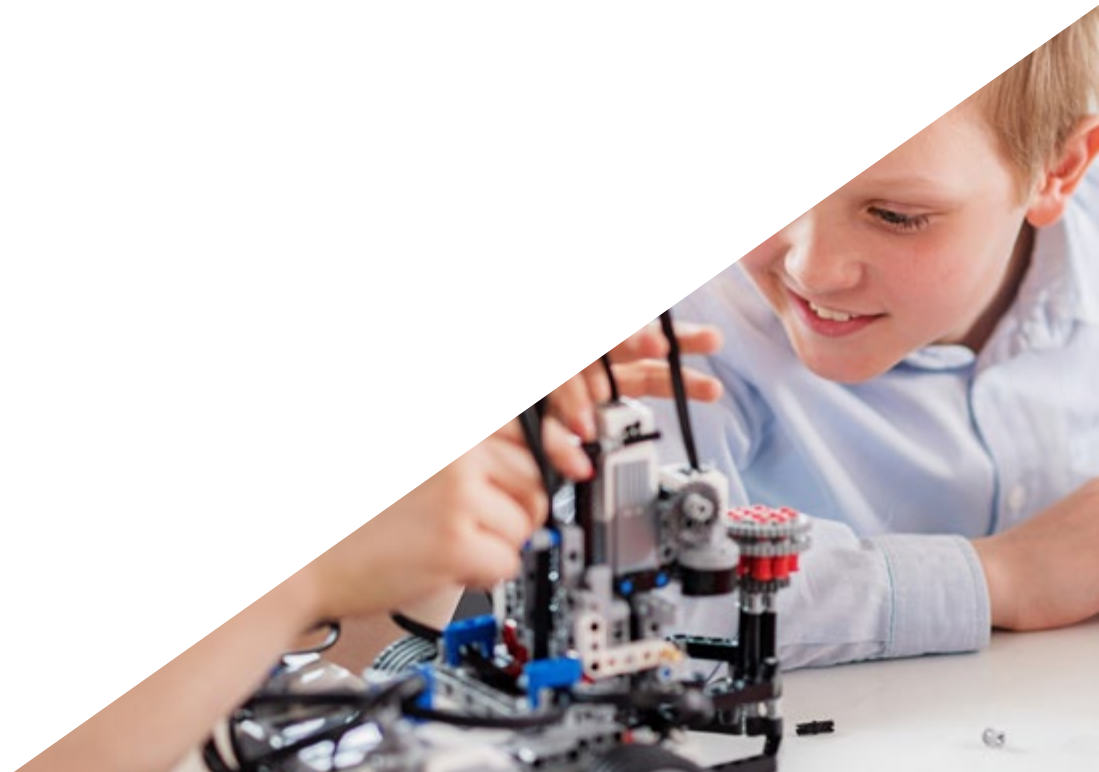
It includes in its teaching staff professionals belonging to the field of educational robotics, who will enable this program the experience of their work, in addition to recognized specialists belonging to reference societies and prestigious universities.

Thanks to its multimedia content developed with the latest educational technology, they will allow the professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to prepare in real situations.

The design of this program is based on problem-based learning, by means of which the educator must try to solve the different professional practice situations that arise throughout the Postgraduate Certificate. To do so, the educator will be assisted by an innovative interactive video system created by renowned experts in the field of educational robotics with extensive teaching experience.

*Increase your decision-making confidence by updating your knowledge through this Postgraduate Certificate.*

*Take the opportunity to learn about the latest advances in educational robotics and improve your students' program will enable.*



# 02

# Objectives

The Postgraduate Certificate in Educational Robotics Knowledge in Primary School Stage is oriented to facilitate the implementation of robots in the classroom in early childhood education.





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*This Postgraduate Certificate is designed for you to update your knowledge in educational robotics in primary education, with the use of the latest educational technology, to contribute with quality and safety to the decision making and monitoring of your students"*



### General Objective

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- Learn to plan in a transversal and curricular way in all educational stages, where education professionals can incorporate new technologies and methodologies in the classroom



*Take advantage of the opportunity and take the step to get up-to-date on the latest developments in the handling of educational robotics in primary education"*





## Specific Objectives

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- ♦ Introduce learning theories related to Educational Robotics
- ♦ Substantiate the application of robotics pedagogy in the classroom
- ♦ Know the legal and ethical aspects of robotics and 3D printing
- ♦ Teach STEAM competencies as a learning model
- ♦ Transfer the teacher to new physical environments that improve the educational practice
- ♦ Know the competencies of computational thinking
- ♦ Turn classrooms into workspaces for their own learning
- ♦ Provide teachers with knowledge related to the brain's functioning
- ♦ Train the teacher to transform the traditional methodology into a playful methodology
- ♦ Understand what a robot is, types and elements that make it up
- ♦ Understand the laws of robotics
- ♦ Make teachers aware of the importance of a transformation in education, motivated by the new generations
- ♦ Learn about new learning models and the application of educational robotics to motivate students towards technological careers
- ♦ Facilitate relationship skills and abilities, for the new classrooms of the future

03

# Course Management

The program includes in its teaching staff reference experts in educational robotics who will enable the experience of their work in this program. In addition, other experts of recognized prestige participate in its design and elaboration, completing the program in an interdisciplinary way.



“

*Learn from reference professionals, the latest advances in procedures in the field of educational robotics in primary education”*

## Management



### Ms. Muñoz Gambín, Marina

- ♦ Degree in Early Childhood Education Teaching from CEU Cardenal Herrera University
- ♦ Educational Coach certified by the Alicante Chamber of Commerce
- ♦ Expert in Neurolinguistic Programming certified by Richard Bandler
- ♦ Responsible for the area of Educational Robotics and Programming for Kindergarten and Primary School at Robotuxc Academy Certified in Lego Education© methodology
- ♦ Emotional Intelligence in the Classroom Trainer
- ♦ Neuroscience Teacher Training
- ♦ Certified trainer of trainers
- ♦ Certified in Music Education as therapy

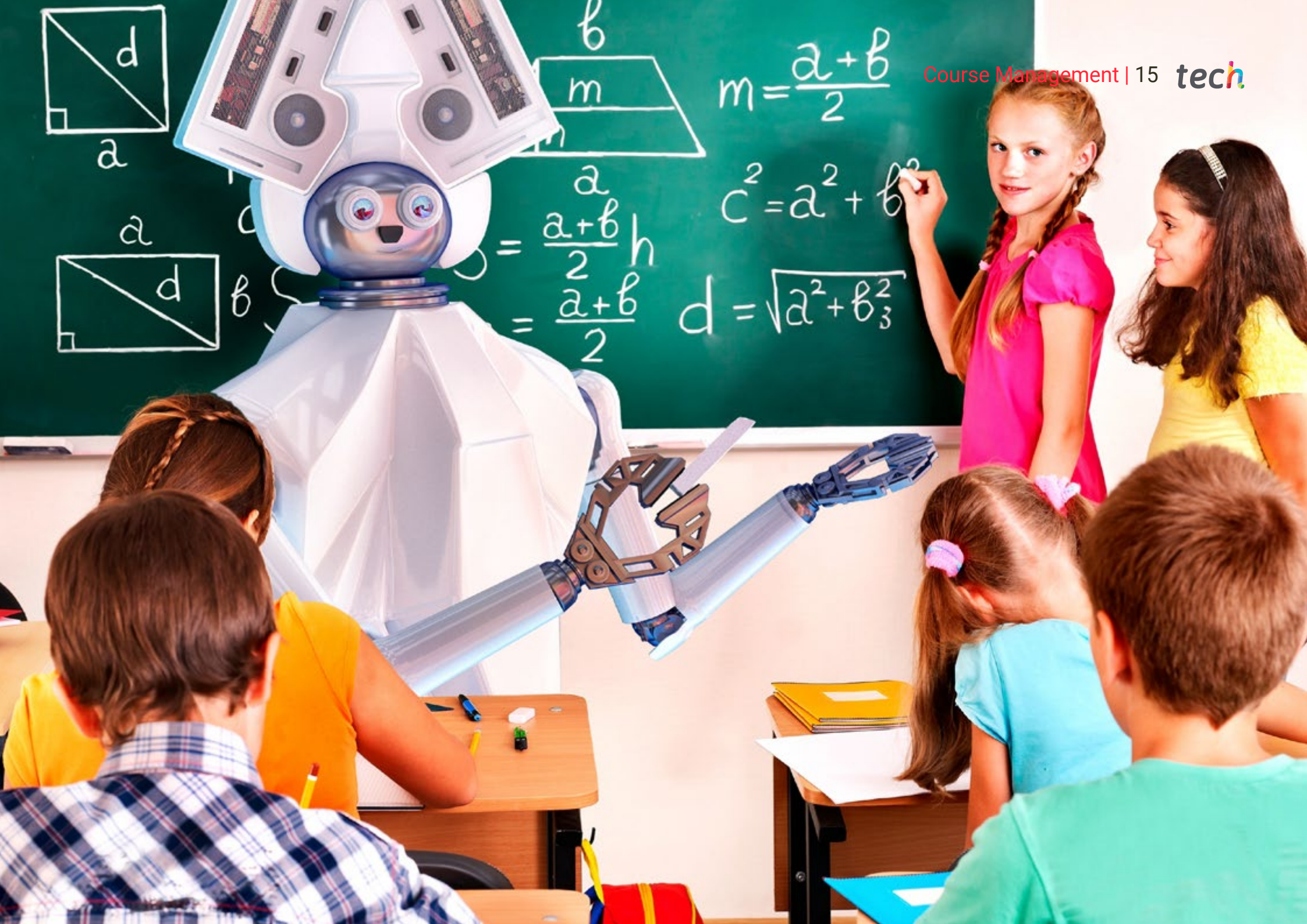
## Professors

### Mr. Coccoaro Quereda, Alejandro

- ♦ Expert in Educational Robotics, Design and 3D Printing
- ♦ Certified in Lego Education© methodology
- ♦ Head of Educational Robotics, Design and 3D Printing for Primary and High School at Robotuxc Academy
- ♦ Robotuxc Academy Robotics National Competition Challenges Specialist
- ♦ Certified trainer of trainers

### Mr. Fernández Peñarroya, Raúl

- ♦ Systemic Family Therapist
- ♦ Social Worker
- ♦ Founder and Director of "EducaDiferente" Positive Discipline in Costa
- ♦ Family and teacher educator in Positive Discipline
- ♦ Lego Serious Play methodology facilitator.
- ♦ Coaching training for professionals
- ♦ Member of the Positive Discipline Association Spain



$$m = \frac{a+b}{2}$$

$$c^2 = a^2 + b^2$$

$$d = \sqrt{a^2 + b^2}$$

$$= \frac{a+b}{2} h$$
$$= \frac{a+b}{2}$$

# 04

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best educational institutions and universities in the country, who are aware of the relevance of up-to-date, innovative education and are committed to quality teaching using new educational technologies.





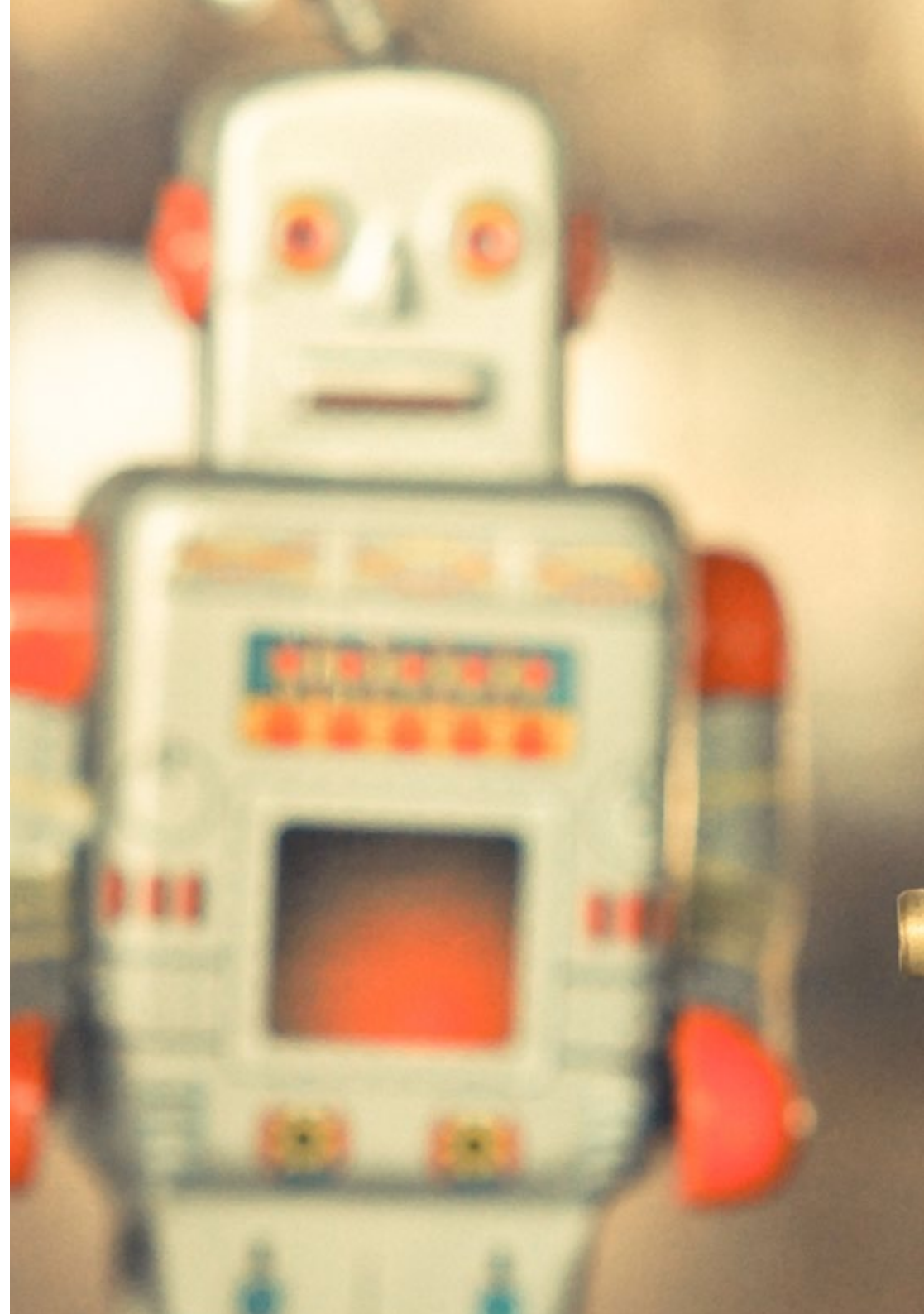


“

*This Postgraduate Certificate in Educational Robotics Knowledge in Primary School Stage contains the most complete and up-to-date scientific program on the market"*

**Module 1. I'm a Grown-up Now! Educational Robotics Knowledge in Primary School Stage**

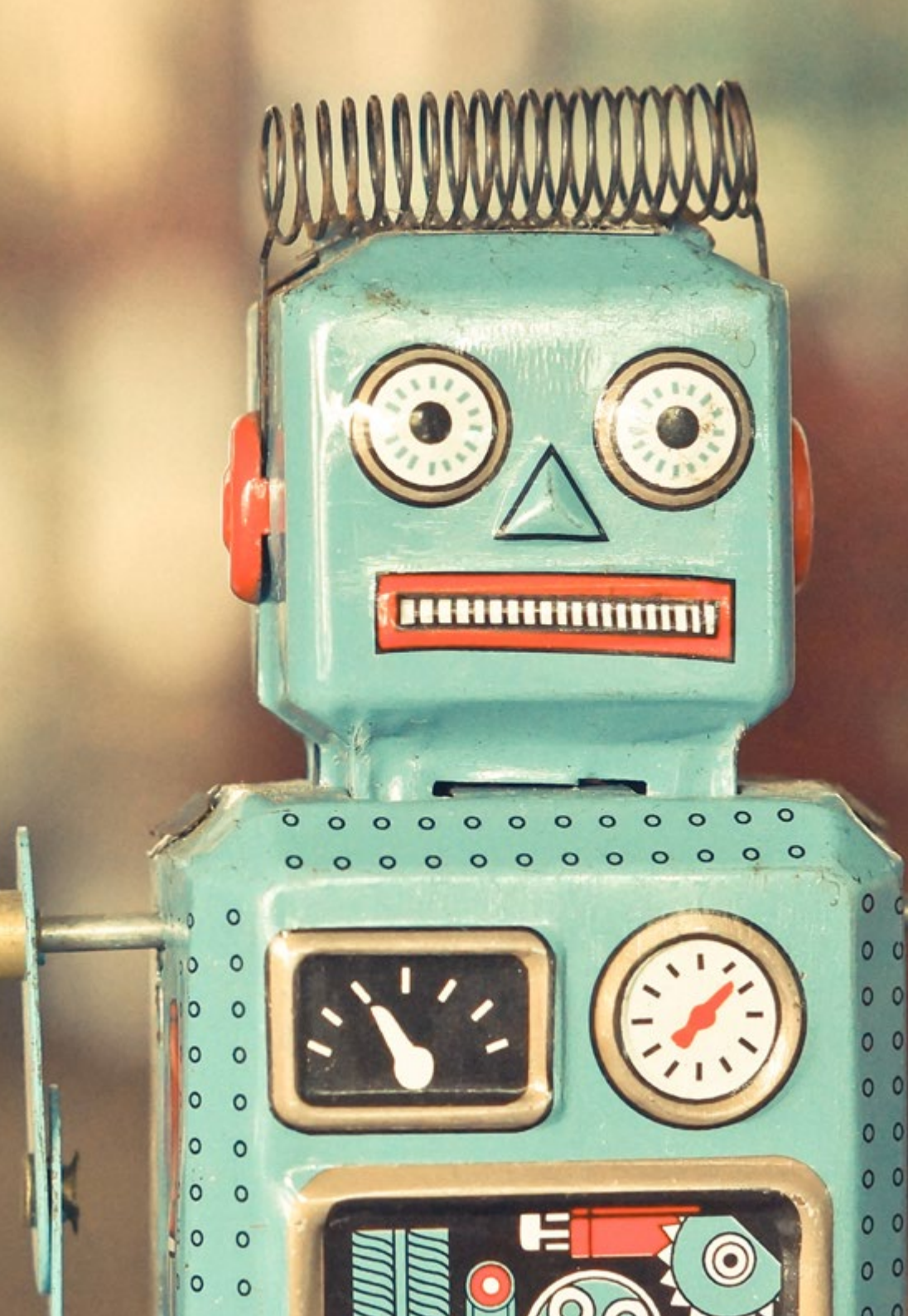
- 1.1. Learning Robotics, Building Apprenticeships
  - 1.1.1. Pedagogical Approach in Primary Classrooms
  - 1.1.2. Importance of Collaborative Work
  - 1.1.3. Enjoying By Doing Method
  - 1.1.4. From ICTs (New Technologies) to LKT (Learning and Knowledge Technology)
  - 1.1.5. Relating Robotics and Curricular Contents
- 1.2. We Become Engineers!
  - 1.2.1. Robotics as an Educational Resource
  - 1.2.2. Robotic Resources to Introduce in Primary School Stage.
- 1.3. About LEGO®
  - 1.3.1. Lego WeDo 9580 Kit
  - 1.3.2. Lego WeDo 2.0 Kit
  - 1.3.3. Simple Machines Kit
  - 1.3.4. Scientific and Technological Principles of Levers
  - 1.3.5. Scientific and Technological Principles of Wheels and Axles
  - 1.3.6. Scientific and Technological Gear Principles
  - 1.3.7. Scientific and Technological Pulley Principles
  - 1.3.8. Basic Parts and Special Parts
  - 1.3.9. Motors and Sensors
  - 1.3.10. LEGO WeDo Programming System
- 1.4. Teaching Practice Building my First Robot
  - 1.4.1. First Notions of Mechanics
  - 1.4.2. Introduction to mBot, Getting Started
  - 1.4.3. Robot Movement
  - 1.4.4. IR Sensor (Light Sensor)
  - 1.4.5. Ultrasonic Sensor. Obstacle Detector
  - 1.4.6. Line Follow Sensor.
  - 1.4.7. Additional Sensors not Included in the Kit.
  - 1.4.8. mBot Face.
  - 1.4.9. Robot Operation with the APP.



- 1.5. How to Design your Teaching Materials?
  - 1.5.1. Development of Competencies with Technology.
  - 1.5.2. Working on Projects Linked to the School Curriculum.
  - 1.5.3. How Is a Robotics Session Developed in the Primary School Classroom?

“

*A unique, key, and decisive educational experience to boost your professional development”*



05

# 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.





“

*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.*

“

*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.



06

# Certificate

The Postgraduate Certificate in Educational Robotics Knowledge in Primary School Stage guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



“

*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 Educational Robotics Knowledge in Primary School Stage** 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.

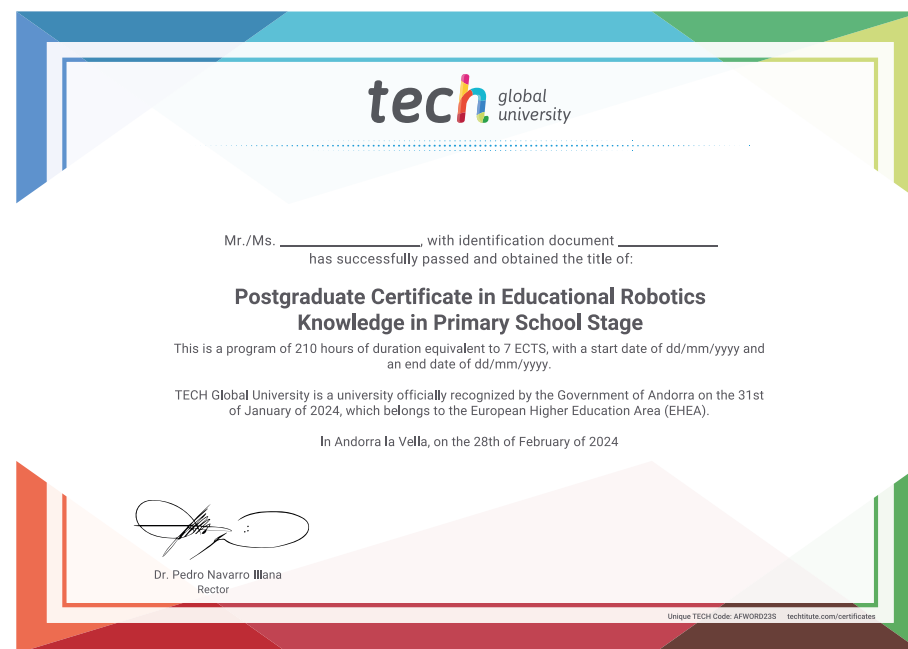
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Educational Robotics Knowledge in Primary School Stage**

Modality: **online**

Duration: **6 weeks**

Accreditation: **7 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.



## Postgraduate Certificate Educational Robotics Knowledge in Primary School Stage

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# Postgraduate Certificate

## Educational Robotics Knowledge in Primary School Stage