

Postgraduate Certificate

Cooperative Learning in Mathematics





Postgraduate Certificate Cooperative Learning in Mathematics

- » 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/cooperative-learning-mathematics

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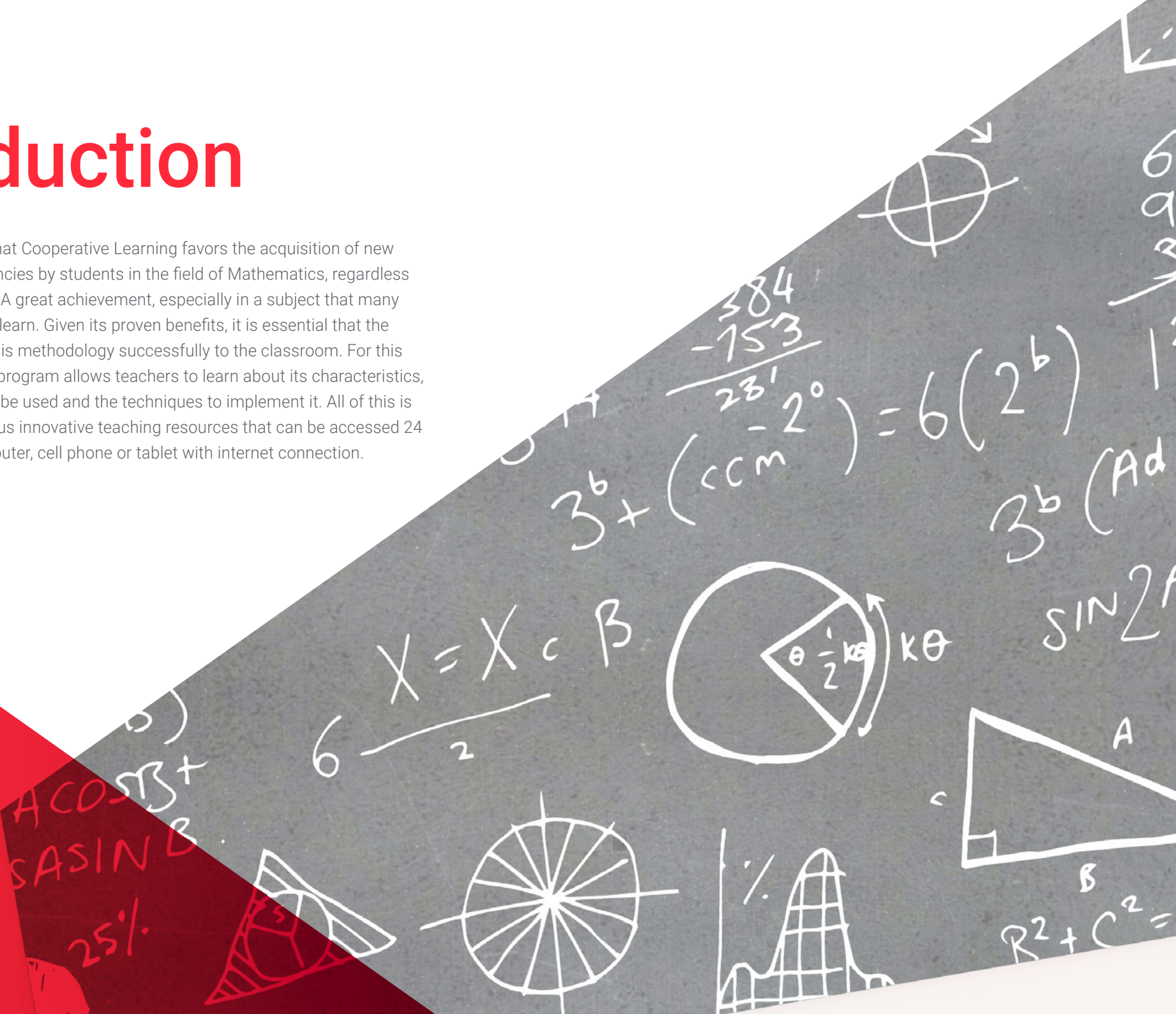
Certificate

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01

Introduction

Scientific studies show that Cooperative Learning favors the acquisition of new knowledge and competencies by students in the field of Mathematics, regardless of the educational stage. A great achievement, especially in a subject that many students are reluctant to learn. Given its proven benefits, it is essential that the teacher is able to bring this methodology successfully to the classroom. For this reason, this 100% online program allows teachers to learn about its characteristics, the didactic resources to be used and the techniques to implement it. All of this is accompanied by numerous innovative teaching resources that can be accessed 24 hours a day, from a computer, cell phone or tablet with internet connection.





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This Postgraduate Certificate provides you with everything you need to design your Mathematics lessons based on Cooperative Learning”

The new methodologies have left behind the teacher's master class, to encourage the direct involvement of students and work in the classroom through much more attractive resources for the student. In this scenario, the Cooperative Learning methodology has gained great relevance, which allows students to acquire competences and improve their academic performance, regardless of their educational stage.

These benefits undoubtedly tip the balance towards its use in schools, especially in the teaching of subjects such as Mathematics, where students have particular difficulty in learning. For this reason, this educational institution has opted for the creation of the Postgraduate Certificate in Cooperative Learning in Mathematics.

An academic option taught in 100% online modality and with the most advanced and current syllabus in this methodology. Thanks to this program, teachers will be able to learn in a dynamic way about its main characteristics, the use of didactic resources or the planning from beginning to end of sessions based on Cooperative Learning.

In addition, thanks to video summaries, detailed videos, specialized readings or practical examples, students will be able to delve into the planning and orientation of cooperative work or learning assessment systems.

TECH offers an unique opportunity to improve teaching through this Postgraduate Certificate which can be accessed comfortably, whenever and wherever you want. It only requires an electronic device with Internet connection to be able to visualize, at any time, the contents hosted on the virtual platform.

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

- ♦ The examination of case studies presented by experts in High School Mathematics Teaching
- ♦ The graphic, schematic and practical contents of the book provide technical and practical information on those 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



Stand out in your teaching work thanks to the strategies that you will obtain to successfully take Cooperative Learning to your students"

“*Enroll now in a Postgraduate Certificate that will allow you to bring to your classroom the most effective and current methodology to teach Mathematics”*

Numerous examples of Cooperative Learning are available for you to apply directly in your mathematics lessons.

Feel free to explore the creation of groups and the teacher's guidance in the methodological practice focused on Cooperative Learning.

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

Its 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 education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Objectives

The main objective of this Postgraduate Certificate is to provide teachers with the most advanced knowledge on Cooperative Learning in Mathematics. In order to bring this methodology to the classroom with rigor, the graduate has innovative pedagogical resources, in which TECH has used the latest technology applied to academic teaching. In addition, throughout the 6 weeks of this program, students will be accompanied by an excellent teacher involved in the most current teaching methods.





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Obtain the most effective theoretical and practical vision on the development of Cooperative Learning in Mathematics teaching”



General Objectives

- ◆ Know the different types of innovative learning methodologies in education applied to Mathematics
- ◆ Know how to apply the different types of innovative learning methodologies in education to Mathematics
- ◆ Know how to discern which is the most appropriate innovative learning method for a group of students studying mathematics in High School
- ◆ Learn to design a didactic unit using the different methodologies of innovation in mathematics education

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You will be able to apply self-assessment and co-assessment systems thanks to the guidelines provided by this 100% online program”





Specific Objectives

- ◆ Learn how to assess cooperative learning applied to mathematics
- ◆ Learn how to design cooperative learning applied to mathematics
- ◆ Know how to extrapolate a cooperative learning example to any content of the mathematics curriculum
- ◆ Learn what cooperative learning applied to mathematics is
- ◆ Know how to differentiate between cooperative and collaborative work in mathematics
- ◆ Know the objectives of cooperative learning applied to mathematics
- ◆ Know the characteristics of cooperative learning applied to mathematics
- ◆ Explore the Puzzle or jigsaw as a form of cooperative learning applied to mathematics
- ◆ Learn about team-achievement divisions as a type of cooperative learning applied to mathematics
- ◆ Explore the co-op as a type of cooperative learning applied to mathematics
- ◆ Learn about Team-Games-Tournaments as a type of cooperative learning
- ◆ Know how to plan cooperative learning in mathematics
- ◆ Know the different roles that students can have in cooperative learning for mathematics

03

Course Management

In sake of offering excellent quality Certificate, TECH carry it out selection process meticulous of each and every one of the teachers who integrate the programs. In this way, the graduate will have a teaching staff with many years of experience in the field of teaching and with a great interest in new teaching methodologies. In addition, thanks to their human quality will be able to resolve any doubts that may arise regarding the content of this program.





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TECH has brought together an excellent team of specialists knowledgeable in the most innovative methodologies used in High School Education”

International Guest Director

Doctor Jack Dieckmann has been an outstanding Senior Mathematics Advisor, who has focused on the revision of curricular materials to strengthen language development in Mathematics. In fact, his expertise has encompassed the evaluation and improvement of educational resources, supporting the integration of effective classroom practices. In addition, he has held the position of Director of Research at Stanford University, where he has been dedicated to documenting the effectiveness of learning opportunities offered by Youcubed, including Jo Boaler's online courses on mathematical mindsets and other research-based materials.

In addition, throughout his career, he has held key roles at renowned institutions. Therefore, he has served as Associate Director of Curriculum at the Center for Assessment, Learning and Equity (SCALE), where he has led the Mathematics team in the development of performance assessments, demonstrating his ability to innovate in educational assessment and apply advanced teaching techniques.

In this sense, at the international level, Dr. Jack Dieckmann has been recognized for his impact on mathematics education, through his scientific participation in multiple activities. He has also obtained significant merits in his field, participating in conferences and consultancies in countries such as China, Brazil and Chile. As such, his work has been crucial for the implementation of best practices in mathematics teaching, and his experience has been instrumental in advancing mathematics education globally.

In this way, his further research has focused on "language for mathematical purposes", especially for students of English as a second language. In turn, he has continued to contribute to mathematics education through his work at Youcubed, as well as his consulting activities globally, demonstrating his position as an outstanding leader in the field.



Dr. Dieckmann, Jack

- Director of Research at Youcubed at Stanford University, San Francisco, United States
- Associate Director of Stanford's Center for Assessment, Learning and Equity (SCALE)
- Instructor at the Stanford Teacher Education Program (STEP)
- International Teaching Consultant in countries such as China, Brazil and Chile
- Ph.D. in Mathematics Education at Stanford GSE in 2009

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Thanks to TECH, you will be able to learn with the best professionals in the world”

Management



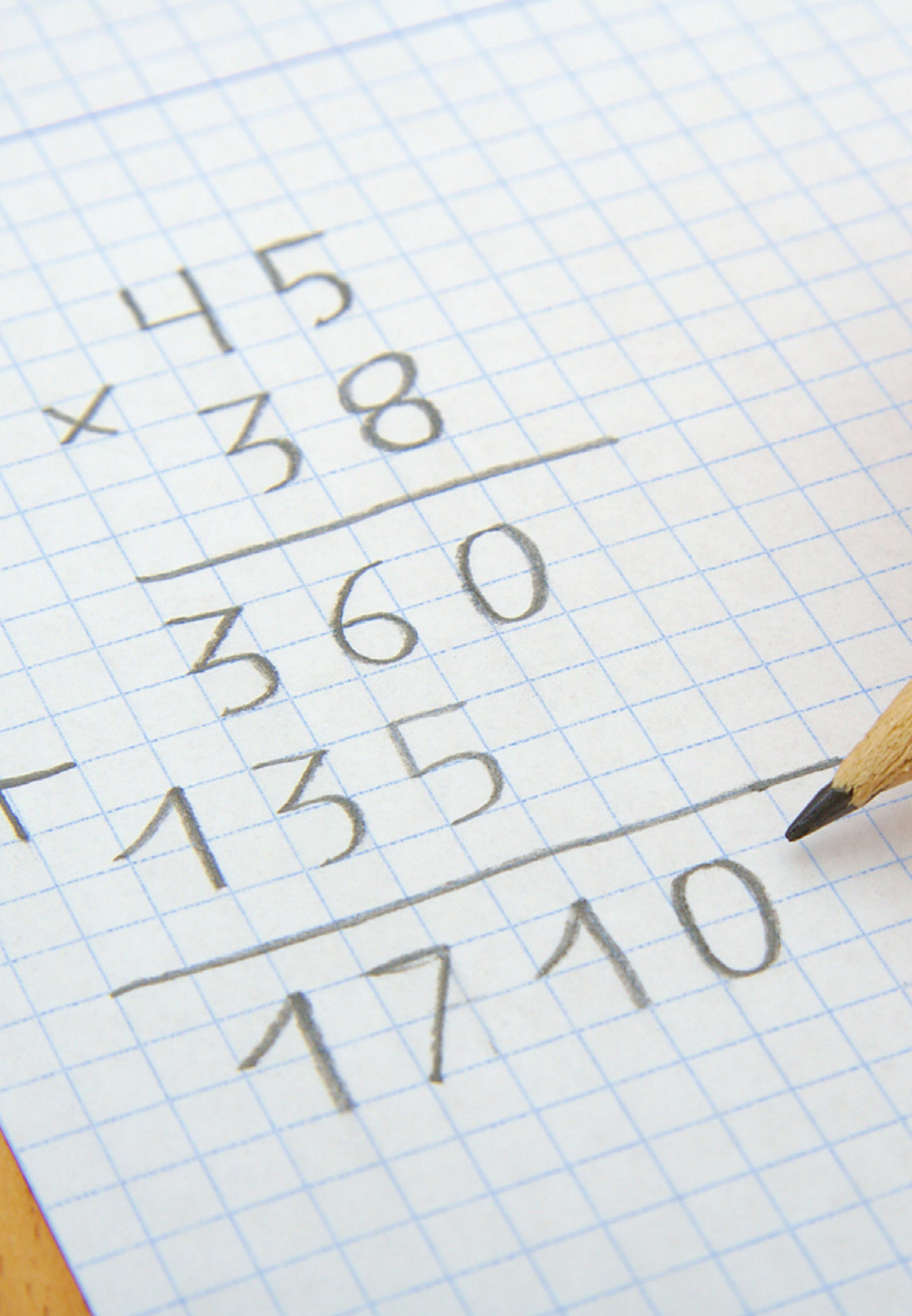
Mr. Jurado Blanco, Juan

- ♦ Secondary School Teacher and Industrial Electronics Expert
- ♦ Mathematics and Informatics teacher in Compulsory Secondary Education at Santa Teresa de Jesús School in Vilanova and Geltrú, Spain
- ♦ Expert in High Abilities
- ♦ Industrial Technical Engineer with Specialization in Industrial Electronics

Professors

Ms. Sánchez García, Manuel

- ♦ Teacher of Compulsory Secondary Education
- ♦ Mathematics teacher in Compulsory Secondary Education at Santa Teresa de Jesús School in Vilanova i la Geltrú
- ♦ Vocational Training and Language Teaching
- ♦ Health Biology Specialty
- ♦ Master's Degree in Teacher Training for Compulsory Secondary and High School Education
- ♦ Degree in Biology



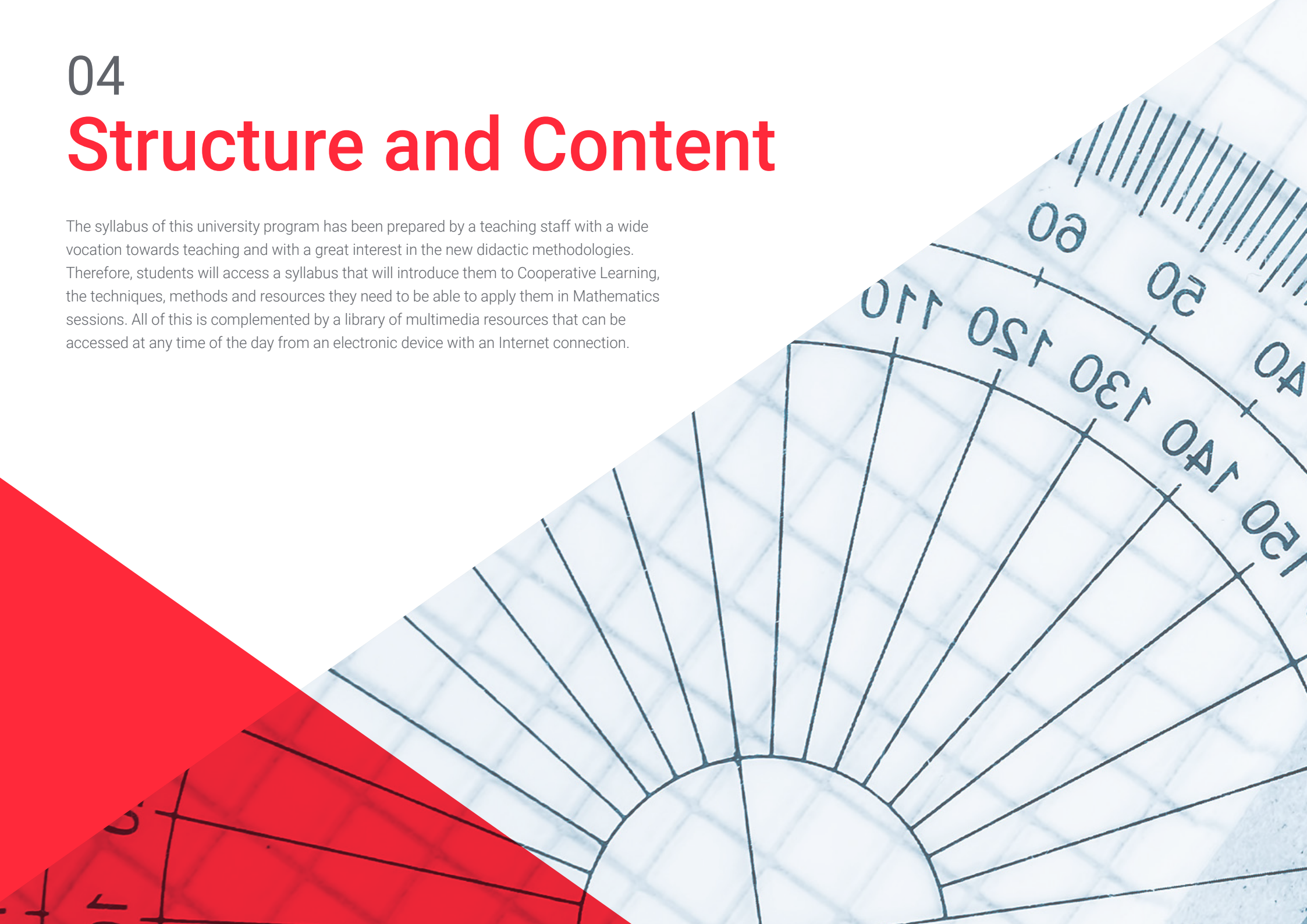
Dr. De la Serna, Juan Moisés

- ◆ Writer specializing in Psychology and Neurosciences
- ◆ Author of the Open Chair in Psychology and Neurosciences
- ◆ Scientific disseminator
- ◆ PhD in Psychology
- ◆ Degree in Psychology. University of Seville
- ◆ Master's Degree in Neurosciences and Behavioral Biology Pablo de Olavide University, Seville
- ◆ Expert in Teaching Methodology. La Salle University
- ◆ University Specialist in Clinical Hypnosis, Hypnotherapy. National University of Distance Education - UNED
- ◆ Postgraduate Certificate in Social Graduate, Human Resources Management, Personnel Administration. University of Seville
- ◆ Expert in Project Management, Administration and Business Management
- ◆ Federation of Services U.G.T
- ◆ Trainer of Trainers. Official College of Psychologists of Andalusia

04

Structure and Content

The syllabus of this university program has been prepared by a teaching staff with a wide vocation towards teaching and with a great interest in the new didactic methodologies. Therefore, students will access a syllabus that will introduce them to Cooperative Learning, the techniques, methods and resources they need to be able to apply them in Mathematics sessions. All of this is complemented by a library of multimedia resources that can be accessed at any time of the day from an electronic device with an Internet connection.



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Access videos in detail, essential readings or case studies developed by the excellent faculty of this Postgraduate certificate at any time”

Module 1. Cooperative Learning in Mathematics

- 1.1. What is Cooperative Learning? How is it Applied to Mathematics?
 - 1.1.1. Differentiation between Cooperative and Collaborative Work
- 1.2. The Objectives of Cooperative Learning in Mathematics
 - 1.2.1. The Objectives of Cooperative Learning
 - 1.2.2. Benefits of this Learning Method
 - 1.2.3. Objectives of Cooperative Learning in a Multicultural Context
 - 1.2.4. Disadvantages of this Learning Method
 - 1.2.5. In Mathematics
- 1.3. The Features of Cooperative Learning in Mathematics
 - 1.3.1. Positive Interdependence
 - 1.3.2. Mutual Support
 - 1.3.3. Individual Responsibility
 - 1.3.4. Social Skills
 - 1.3.5. Self-Assessment of Group Performance
- 1.4. Types of Cooperative Learning in Mathematics
 - 1.4.1. Puzzle or Jigsaws
 - 1.4.2. Team Achievement Divisions
 - 1.4.3. Research Groups
 - 1.4.4. Co-op Co-op
 - 1.4.5. Teams-Games-Tournaments
- 1.5. Planning and Guidance in Cooperative Work in Mathematics
 - 1.5.1. Implementation Stages
 - 1.5.2. Group Formation
 - 1.5.3. Classroom Set-Up
 - 1.5.4. Assignment of Student Roles
 - 1.5.5. Explanation of the Task to be Performed
 - 1.5.6. Teacher Intervention in Cooperative Groups
- 1.6. The Teacher's Role in Cooperative Work in Mathematics
 - 1.6.1. Roles of the Teacher
 - 1.6.2. The Role of the Teacher





- 1.7. The Assessment of Cooperative Learning in Mathematics
 - 1.7.1. Assessment of the Individual Learning Process while Working Cooperatively in Mathematics
 - 1.7.2. Evaluation of the of Group Learning Process while Working: Cooperatively in Mathematics
 - 1.7.3. The Role of Observation for Assessment
 - 1.7.4. Co-Evaluation of Cooperative Work in Mathematics
 - 1.7.5. Self-evaluation of Cooperative Work in Mathematics
- 1.8. Examples of Cooperative Learning Applied to Mathematics
 - 1.8.1. Review of Cooperative Project Planning
 - 1.8.2. First Phase: Preliminary Decision-Making
 - 1.8.2.1. Learning objectives
 - 1.8.2.2. Cooperative Methodology to be Used
 - 1.8.2.3. Group Size
 - 1.8.2.4. Learning Materials
 - 1.8.2.5. Assignment of Students to Groups
 - 1.8.2.6. Preparation of the Physical Space
 - 1.8.2.7. Role Distribution
 - 1.8.3. Second Phase: Task Structuring: Positive Interdependence
 - 1.8.3.1. Explanation of the Task
 - 1.8.3.2. Explanation from of Success Criteria
 - 1.8.3.3. Structuring Positive Interdependence
 - 1.8.3.4. Structuring of Individual Responsibility
 - 1.8.3.5. Interpersonal Skills and Social Skills
 - 1.8.4. Third Phase: Execution and Control of the Process
 - 1.8.5. Fourth Phase: Evaluation of the Learning Process and Group Interaction
 - 1.8.5.1. Activity Closure
 - 1.8.5.2. Assessment of Quantity and Quality of Learning
 - 1.8.5.3. Evaluation of Group Performance

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.





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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.



06

Certificate

The Postgraduate Certificate in Cooperative Learning in Mathematics 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 Cooperative Learning in Mathematics** 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 Cooperative Learning in Mathematics**

Modality: **online**

Duration: **6 weeks**

Accreditation: **7 ECTS**



future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development language
virtual classroom



Postgraduate Certificate Cooperative Learning in Mathematics

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Postgraduate Certificate

Cooperative Learning in Mathematics