

Mathematics and Connections with other sciences. Examples from Ancient Greece.

This course is about the relation of Mathematics with other scientific sectors like Physics, Music, Architecture, Painting and more. We meet Archimedes, Thales, Pythagoras and we see applications and examples of Ancient Greece like Parthenon, Pyramids, Fibonacci sequence, Golden ratio, Number ϕ and more. Real life examples seen with the eye of the educator that can help make teaching of Mathematics interesting and engaging without the technology distractions.



The most common question we hear from frustrated students is: “Why we need math?” Or “I hate math. Why we need so many math at school? How is this related with real life?”

The purpose of this course is to transfer unusual, practical knowledge about math, the use of math and the connection to other sciences from experts to trainees and then from trainees to their students and schools.

Who can benefit most:

- Mathematicians or other teachers who teach math at schools or other subject related to mathematics.
- Education professionals, such as Inspectors, Advisers, Managers, Principals, Career Officers and other professionals interested in education, learning and Maths.

Methodology:

The trainees will get a basic understanding with a short presentation for the combination of mathematics and other sciences . Then they will learn through really examples the methodologies and then they can pass on to their students. Before moving on to the next example there is a

discussion about the importance of all and how to apply the techniques in their school environment and their local conditions.

Objectives:

- Connection of mathematics with other sciences
- learn about the role of mathematics in real applications
- rediscover mathematics through problem solving
- research ancient problems to discover the beginning of scientific methods
- give meaning to mathematics procedures and algorithms

Day 1

Welcome

Registration and Hand-out of material

Ice breaking

Course overview

Day 2

Pythagoras

Fundamental Pythagorean Mathematics

Pythagorean Theorem

Musical theories and investigations as application of analogies, geometry, number theory, golden ratio and Fibonacci numbers.

Day 3

Pythagorean School

Water mill by Pythagoras

Astronomy and Ancient Mathematics

Day 4

Golden Ratio, Number Φ and Architecture

Relation between number Φ and Fibonacci sequence

Archimedes' screw and other applications

Day 5

Egyptian Pyramids and Parthenon of Athens as example of Mathematics

Mathematical schools of thoughts in Ancient Greece

All the Greek spirit: Delphic Maxims, Philosophy

Geography – Cartography by Anaximander

Day 6

Thales (Basis of Geometry)

Applications of Mathematic at art

List of works designed with the golden ratio

Earliest practice of medicine by Hippocrates

Day 7

–Open discussion to clarify doubts, answer queries and assist participants

–Evaluation

–Certificates

– Farewell (before lunch time)

Implementation assistance

Implementation assistance

We can support all teachers with email, Facebook messages or one to one teleconference meetings to discuss possible problems at the implementation phase of your project.

Course fees: 490 Euros (7-day training)

Course Price includes: Registration Fees and tuition for the course -7 days- (50 hour-training-including social-cultural activities and practical assignments tasks to do after the course), Course Material, Certificate of Attendance, dossier with information material about Greece.

We have a vast database of skilled professionals, academics and trainers in a lot of different subjects.