



## STEM (SCIENCE- TECHNOLOGY- ENGINEERING- MATHEMATICS)

**LANGUAGE:** Languages used for the training: English, but many languages for 6+ groups. The language of the course can be arranged according to the characteristics of the groups in English, German, Italian, Spanish and Turkish.

**LOCATION AND DURATION:** **18-27 NOVEMBER 2019 ROME, ITALY**  
**6-15 APRIL 2020 ISTANBUL, TURKEY**

### COURSE SPECIFICATIONS:

Number of Training Days:10 Days

Lessons per week: 30 English Language

Lesson Duration: 09:00-15:00 for a day

Length and fees: <http://bluecore-edu.com/index.php/courses-and/>

Class Size: Maximum 20

Language level: A1/A2

Suitable for: School administrators, school staff, teachers and Everyone

### COURSE BACKGROUND AND COURSE OVERVIEW:

Working with students is really important to understand the difference methodology about the STEM system. Teachers are an important point for students and they need to work on themselves for the best answer to students need. In the European system is important to have the level of STEM where math, technology, electronics, and science are the base of study at all levels.

Strategic interventions and the exchange of experience and visit the new reality in Europe can offer to teachers the opportunity for to exchange skills and know how so that they can start to use the new methodology when they came back in their country.

The final stakeholder is the students that can take for their skills the new teachers competence. In this modality, the school can be always the place where the students can learn and where can improve their international skills with their teachers.

The National Science Board "NSB" have stressed the importance of the STEM education for years. So, STEM education in schools should provide the students inquiry-based learning, peer

cooperation and collaboration, being open-minded individuals, problem-solving methods. Then, NSB recommended a policy about implementing this education. Teachers can gain more information and experience by participating in this course with their colleagues.

### **COURSE OBJECTIVES:**

The aims of the course:

- Understanding the importance of creating investigative, technological classrooms
- Implementing problem-based science with turning into it a positive STEM accomplishment
- Trying to find the methods of creating the qualified teacher construction
- Providing student success with technology and innovation. These successes should not be measured with the general education norms.
- To teach Science Technology Engineering and Mathematics with innovative approach
- Developing English and ICT skills thanks to the STEM education in schools
- Opening new and innovative areas

### **CONTENT AND METHODOLOGY:**

The content of the course will be firstly about the Science education with the integration of the technology, Engineering, and Mathematics. There will be discussions about how teachers can make their students attracted to these innovative courses, and how they make comprehended their students STEM's relation to the real life. In order to acknowledge students, teachers and trainers should get more experience, first. With our experienced STEM trainers, teachers will be more informed and experienced.

The methodology will be as follows:

- Encouraging the teachers and parents to start the STEM education in their early ages.
- We will talk about the professional development and its relation with the STEM education
- We will find the intervention for STEM starters and we will make for implementing it gradually.
- Providing a qualified and embedded professional development for classroom teachers about science
- Applying technological functions and their relations with STEM
- Trying to find the methods of creating investigative, innovative and technological classroom environments.

**Methods:** Lectures, exercises, discussions, teamwork, role-playing, study visits

### **Course Topics:**

- Science Education, its relation to Technology, Engineering and Mathematics
- Innovative and technological environments
- Personal development
- The relation of STEM education with the English language and ICT education
- Using Science and other elements related to it as a motivating instrument

### **PROGRAM (Training activities):**

- PPT slides
- discussions
- evaluating
- sharing thoughts and ideas with the group
- sightseeing and the school visits

## PREPARATION:

After confirming registration, participants will be informed about the details of the course (arrival, daily program). Participants will be able to introduce themselves and bring a few examples of routines and practices that they apply to their teaching.

## MODULES:

Module1: Science teaching in early ages

Module2: Future robotic coding

Module3: Science and its relation with Technology, Engineering, and Mathematics

Module4: Technological classrooms and its relation to science and robotic coding

Module5: Professional development with STEM education

Module6: Creating a qualified teacher construction experienced in STEM education

Module 7: Technological devices and their contributions to science

Module 8: Reaching up innovation with STEM and robotic code

## FOLLOW UP:

The final stakeholder is the students that can take for their skills the new teacher's competence. In this modality, the school can be always the place where the students can learn and where can improve their international skills with their teachers.

This process needs to be carried out in a holistic approach by using the knowledge and skills of professional members (Math, Social Worker, Engineering, Doctor, Teacher) from different disciplines.

So many people, including those who are registered in our city and who apply to public institutions for any reason, constitute the target group. Our aim with the project is; Successful work, knowledge of different technology system, science application and innovation on STEM process.

## DAILY TIMETABLE:

### 1<sup>ST</sup> DAY:

(09:00-15:00)

-Welcome to the participants

-Introduction to the course

Coffee Break

-STEM education and its fields in general meanings

-Discussion

### 2<sup>ND</sup> DAY

(09:00-15:00)

-Integration of engineering to the mathematics and discussion about their concepts

-STEM and its contributions to the professional and personal improvement of the students

Coffee Break

-The technological developments in the schools and their relationship with STEM

-Why this STEM education is necessary in modern days?

-Discussion

### 3<sup>RD</sup> DAY

(09:00-15:00)

-Introduction of problem-based curriculum units

-Turning it into a positive STEM accomplishment by professional development

Coffee Break

-The Industrial Ages comparing to the technological development

-Discussion

#### 4<sup>TH</sup> DAY

(09:00-15:00)

-To improve science education with the integration of technology, engineering, and mathematics

-Explicit models of teaching science

Coffee Break

-The STEM and its fields approved by National Science Foundation

-Discussion

#### 5<sup>TH</sup> DAY

(09:00-15:00)

-Sightseeing

-Seeing the historical places together

#### 6<sup>TH</sup> DAY

(09:00-15:00)

-Specific practice of STEM education to the teachers by means of theoretical tests

-Discussions of the fields that students attract

Coffee Break

-The STEM and its relationship between engineering in modern countries

-Discussion

#### 7<sup>TH</sup> DAY

(09:00-15:00)

-How teachers can measure their students and their professional development with STEM education

-Discussion about the reasons why the students fail in the science topics in their lessons

Coffee Break

-Innovative discoveries created by STEM curriculum and STEM students

-Discussion

#### 8<sup>TH</sup> DAY

(09:00-15:00)

-Science curriculum and its improvement techniques for high ability-learners

-Relating the STEM education with the real life

Coffee Break

-The STEM education and contributions of robotic coding to this education curriculum and the technological development

-Discussion

#### 9<sup>TH</sup> DAY

(09:00-15:00)

-School visits

-Doing social activities with participants

#### 10<sup>TH</sup> DAY

(09:00-15:00)

-Evaluation

-Distributions of certificates to the participants

-Goodbye

**CERTIFICATIONS:** At the end of the course; Participants will take "Certificate of Participant", "Europass Mobility Certificate", "Staff Mobility Agreement" and BlueCore International Company Invoice certificates.



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