

STEM & STEAM

Teacher: João Garrido

Course Duration: one week, from Monday to Saturday, 30 hours

Number of Participants: Min. 6 – Max. 20



DESCRIPTION

CSTEAM education is a teaching model focused on five fundamental subjects: Science, Technology, Engineering, Arts and Mathematics. It started out as just STEM, an acronym that did not yet include the A for Arts, but in a few years, the teachers understood that this discipline should be part of the model, due to the importance of including and crossing creativity and innovation with scientific studies and activities, thus strengthening these areas of study. These five subjects provide students with essential skills for the future of work. Critical and analytical thinking, decision making, problem solving, among other soft skills, are precious tools that STEAM Education promotes through practical exercises that can be an asset in the students' future. These exercises or activities must cross at least two of these disciplines and promote collaboration between students.

In this course you will learn how to design a STEM/STEAM project, plan its educational activities, assessment and respective monitorization. It will cover subjects like STEM/STEAM Methodologies, Instructional Design of Constructivist Learning Environments, Project Management and Assessment.

The course will be very practical, combining theory with practice, group work and discussion with hands-on phases in which the participants will have the opportunity to design their own STEM/STEAM project.

LEARNING OUTCOMES

Participants to the course will learn to:

- Contextualize the Pedagogical Design of Learning within the scope of the Learning Theories and the creation of Constructivist Learning Environments.
- Apply “Instructional Design” Methodologies in the Design of Learning STEM/STEAM Projects.
- Know the specifics of Project Management and plan STEM/STEAM Projects according to them.
- Understand the concepts behind the STEM/STEAM Methodology.
- Know Project Management procedures for Monitoring and Follow-up within the scope of STEM/STEAM Projects.
- Understand the evaluation processes in STEM/STEAM Projects.
- Create, collaboratively, a STEM/STEAM Project and respective Monitoring and Evaluation Instruments.

STEM & STEAM

Teacher: João Garrido

Course Duration: one week, from Monday to Saturday, 30 hours

Number of Participants: Min. 6 – Max. 20



Monday

Introduction

- Introduction of the course and the external activities.
- Icebreaking activity to introduce the trainer and the participants;
- Introduction to STEM/STEAM Education and Methodologies.

Tuesday

Pedagogical Design of STEAM Projects

- Pedagogical Design of Learning in STEM/STEAM Projects:
 - Contextualization – Learning Theories;
 - “Instructional Design” methodologies;
 - Design of Constructivist Learning Environments.

Wednesday

Design and Development of STEM/STEAM Projects

- Project Management Methodology – principles and guidelines;
- Design of STEM/STEAM Projects:
 - Project Structure and Organization.
 - Sequencing, Flow and Scheduling of Activities and Tasks.
 - Creation of monitoring and evaluation instruments for projects.

PROGRAM

Thursday

Management and Monitoring of STEM/STEAM Projects

- STEM/STEAM Project Management:
 - Monitoring STEM/STEAM Projects.
 - Planning of Learning Assessment.
 - Evaluation of STEM/STEAM Projects.

Friday

Practical Application Work

- Creation, in groups, of a STEM/STEAM Project and plan the respective Monitoring and Evaluation Instruments.

Saturday

Course Closure & Tour

- Course evaluation and awarding of the course Certificate of Attendance.
- 21st Century Skills – The Values of Art and Culture – Excursion Tour and external cultural activities.