



# STEAM EDUCATION AND ENTREPRENEURSHIP

## Presentation

The students' attitude towards projects that link Science, Technology, Engineering and Mathematics (STEM) has been approached from different perspectives that include the interest, the own aspirations, and capacities in STEM. In recent years, the A (from Arts) has been included in order to broaden the idea of the need for interdisciplinary work to activate learning and also to give representation to the artistic disciplines in the design of projects.

The research about the concept of self-efficacy (perception that students have about their own abilities when participating in scientific-technological activities) has allowed finding strategies to improve student's motivation and entrepreneur attitudes inside STEAM tasks. Knowing the evidence and existing strategies in this field is a useful resource to improve the capability to design learning situations by teachers.

## Objectives

The aims of the course are:

- To know the main characteristics of STEAM projects
- To know the entrepreneur competences needed for the XXIst century
- To know different learning strategies to improve the entrepreneur competences of students...
- To know examples of good practices of STEAM projects being develop on schools today
- To know a tool to analyse the presence of different disciplines within a STEAM project

## Target group

The training course is addressed to primary and secondary school teachers, VET teachers, VET trainers, adults' teachers, managers, and employees of enterprises as well as social and youth workers of non-profit organization and public entities.

## Language of course

This course will be provided in English. It is requested to all participants to have a level of English enough to understand the trainer and to interact and participate actively in the course.



## Methodology

The methodology used in the course combines cooperative work techniques and practical tasks with the teacher's explanation of specific contents related to the objectives of the course.

The use of co-evaluation techniques is also practiced as an example of formative evaluation.

It is foreseen 4 days of practical lessons and 1 day of visit to a school or organisation dealing with the subjects of the course. Moments of socialisation have been also foreseen.

## Programme

### Day 1 – 4 hours

#### Introduction to STEAM

- Welcome meeting. Presentation of programme. Presentation of participants and sharing expectations
  - Introduction to the course, presentation of participants and sharing expectations
  - What are STEM projects?
  - From STEM to STEAM projects.
  - STEAM resources
  - Creating a STEAM entrepreneur project (practical transversal exercise)
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- City Tour – 1 extra hour

#### Learning Outcomes:

- ✓ Understanding of STEM, STEAM and STREAM disciplines
- ✓ Understanding the range of resources for interdisciplinary projects
- ✓ Introduction to Systems Thinking as a basis for creating STEAM projects
- ✓ Practice with contextual analysis tool.

### Day 2 – 4 hours

#### Students on STEAM

- Self-efficacy and STEM
- STEM identity: gender situation
- Technological and scientific literacy through STEAM projects
- Resources to evaluate cooperative work among students
- Creating a STEAM entrepreneur project (practical transversal exercise)

#### Learning Outcomes:



- ✓ Acquisition of gender perspectives and realities in teaching
- ✓ Understanding project evaluation systems
- ✓ Practice with a tool for analyzing interest groups and types of learners.

### Day 3 – 4 hours

#### Entrepreneur competences for XXIst century

- The Big 13: Understanding the meaning of Entrepreneur competences
- Entrepreneur education verbs
- Entrepreneur competences passport
- Creating a STEAM entrepreneur project (practical transversal exercise)

#### Learning Outcomes:

- ✓ Acquisition of practices for the promotion of entrepreneurial skills in the classroom
- ✓ Understanding of interdisciplinary narrative presentation tools
- ✓ Practice with a project narrative planning and management tool.

### Day 4 – 4 hours

#### Creation of a STEAM entrepreneur project

- Analysis of STEM / STEAM projects
- What should we take into account when designing a STEAM entrepreneur project?
- Creating a STEAM entrepreneur project (practical transversal exercise: conclusion)

#### Learning Outcomes:

- ✓ Consolidation and practice of skills on evaluation and self-evaluation of STEAM projects
- ✓ Practice in communicating interdisciplinary STEAM projects

### Day 5 – 4 hours

#### Professional visit, Evaluation, Certification and Farewell

- Visit to a school
- Evaluation and certification
- Farewell activity

#### Learning Outcomes:

- ✓ Foster intercultural exchanges between different cultures and countries
- ✓ Go deeper into how to give and receive feedback
- ✓ Engage in a process of self-reflection through open conversations and new cultural experiences



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### Quality Commitment

ESMOVIA, as course provider, commit to respect and follow the quality standards for courses under Key Action 1:

<https://erasmus-plus.ec.europa.eu/resources-and-tools/quality-standards-key-action-1>

### Fees

Course fee: 423,50 €/participant VAT included. Possibility of invoicing 350,00 €/participant if sending organization has Intracomunitary VAT number. The price includes:

This amount includes:

- Preparation for the course
- Tuition
- Training materials
- Administration costs
- Organizational costs
- Professional visit to school
- City tour in Valencia
- Farewell activity

### Requirements

Minimum of 8 participants. For smaller groups, contact us.

### Contact

Clémence Hugon  
Groups Coordinator  
[hugon@esmovia.es](mailto:hugon@esmovia.es)  
+34 963 38 46 20  
Skype: hugon\_19

### References

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C/ Pintor Martínez Cubells, 2, pta. 6  
46002 Valencia SPAIN  
[www.esmovia.es](http://www.esmovia.es)



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