Innovative STEAM Teaching with AI, PBL, and Gamification

by Vasiliki Plati

Course details

- One-Week course
- From 480€ to 580€* (cultural activities included)
- Certificate of attendance included (80% of attendance required)
- Available in Athens, Istanbul, Paris, Rhodes

* a 60 € late registration fee will be applied if you register less than 8 weeks before the course start date. All prices are VAT included or not due.

Course description

Schools today have a harder time teaching students the skills they will need in the future, and this is often because they don't have a good STEAM (Science, Technology, Engineering, Arts, and Mathematics) education.

Students miss out on important abilities like creativity, critical thinking, and collaboration if they do not receive a solid grounding in STEAM.

More often than not, “standalone” learning is conceived as the most efficient approach, even if in most cases, **real-world problems** are not solved in isolation.

As a result, students easily lose interest when not presented with authentic, interdisciplinary, and **meaningful learning opportunities**.

This course aims to provide participants with the knowledge and the practical tools to implement an **integrated STEAM culture** in their classrooms.

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By exploring a variety of practical strategies, including the use of ICT and AI tools, participants will try out ways to link the learning to **real-world challenges**, making it relevant for their students.

Participants will be introduced to teaching approaches like Project-Based Learning, Design Thinking, and Gamification, which will allow students to tackle multifaceted, real-world problems in an **engaging interdisciplinary environment**.

Additionally, this course will provide participants with the chance to use a mix of physical and digital materials in STEAM Makerspaces, as well as consider how to design fun, process-driven lessons and activities.

Also, participants will explore the origins of technological inventions by visiting the Museum of **Ancient Greek Technology**, where they can draw inspiration from objects that express the holistic spirit of STEAM.

By the end of the course, teachers will have understood **STEAM education methods** and technical requirements, and will be able to create effective, **ready-to-use STEAM lesson plans** that will truly transform the learning experience for their students.

Learning outcomes

The course will help participants to:

- Gain a deep understanding of the holistic nature of STEAM education;
- Explore a wide range of teaching methodologies to effectively support STEAM projects;
- Strengthen collaboration skills through interactive group activities with fellow educators;
- Develop expertise in crafting powerful driving questions and real-life problem statements for student engagement;
- Get inspired to use diverse physical/digital materials and ICT/AI tools in STEAM activities;
- Access a library of ready-made STEAM lesson plans for immediate classroom use;
- Co-create STEAM lesson plans, ready to implement with their students.

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Tentative schedule

Day 1 - Course introduction

- Introduction to the course, the school, and the external week activities;
- Icebreaker activities;
- Presentations of the participants' schools.

Key concepts and components of STEAM education

- Explore and apply the STEAM framework through an introductory challenge.

Day 2 - Collaborative workshop featuring real-world STEAM learning activities

- Examine the significance of driving questions in STEAM projects;
- Experiment with various teaching methodologies to enhance STEAM projects;
- Familiarize themselves with the physical and digital materials and ICT/AI tools available in STEAM makerspaces;
- Inspirational visit to a museum.

Day 3 - Leveraging ICT and AI tools for STEAM projects- hands-on activities

- Engage with STEM virtual labs to explore scientific concepts;
- Utilize Augmented Reality (AR) and 3D design tools for creative projects;
- Discover innovative AI tools that enhance STEAM learning;
- Participate in STEAM outdoor learning activities.

Day 4 - STEAM study groups

- Collaborate to develop a STEAM lesson plan following established guidelines and templates;

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- Save time and energy by building custom STEAM AI assistants;
- Genius Hours ideas.

Day 5 - Presentations of STEAM lesson plans

- Conduct peer assessments and provide constructive feedback;
- Share improvement suggestions and innovative ideas for enhancing lesson plans.

Day 6 - Course closure and cultural activities

- Course evaluation: round-up of acquired competencies, feedback, and discussion;
- Awarding of the course Certificate of Attendance;
- Excursion and other external cultural activities.

About the provider

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