



# Arduino for STEAM: Hands-On Learning in the Digital Age

By Michela Graciotti

## Course details

- 🕒 One week course
- € Starting from 480€ (Cultural activities included)\*
- 👥 Min. 4 - max. 14 participants
- 📄 Certificate of attendance included (80% of attendance required)
- 📍 Available in Berlin, Nicosia, Rome, and Split

\* A 60 € late registration fee will be applied if you register less than 8 weeks before the course start date.

## Course description

In today's rapidly evolving world, students navigate a complex reality that is often overlooked within the confines of the classroom, presenting significant challenges for teachers and educators.

In response, this course aims to equip teachers with the tools and knowledge necessary to address these challenges by utilizing Arduino, an open-source platform that facilitates the connection of technology with the physical world.

Through an interdisciplinary and hands-on approach, course participants can foster crucial skills such as problem-solving, creativity, critical thinking, and collaboration, all of which are considered essential for students to become active and engaged citizens in our ever-evolving society.

This course aims to provide teachers with essential knowledge for integrating Arduino into a STEAM framework, fostering creativity, and empowering students on their educational journey.

The course will offer teachers and school staff the opportunity to get to know and start using Arduino in simple projects with the Arduino Starter Kit: an easy-to-use tool to start coding.

Moreover, the course will also guide participants to use Arduino in class with their students, to foster and implement active learning.

During the course, participants will gain insights into innovative methods of incorporating Arduino into school curricula, also using student-centered methodologies, allowing their students to learn in a cooperative and creative way.

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Course code ICT.1.ARDS - <https://www.teacheracademy.eu/course/arduino-steam/> - Last update 17/01/2024

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By the end of the course, participants will be able to use Arduino basics and implement STEAM-related activities into their school curriculum.

## Learning outcomes

The course will help the participants to:

- Acquire basic knowledge of Arduino through the Arduino Starter Kit;
- Integrate Arduino in the STEAM framework;
- Design student-centered activities related to Arduino;
- Implement creative thinking with Arduino.

## Tentative schedule

### Day 1 – Intro and theoretical basis

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- Introduction to the course, the school, and the external week activities;
- Warm-up activities;
- Presentations of the participants' schools;
- 21st-century skills and Bloom's Taxonomy;
- Introduction to Arduino;
- Introduction to STEAM.

### Day 2 – What is Arduino?

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- Arduino Starter Kit presentation and set up;
- Arduino hands-on: first projects.

### Day 3 – STEAM and Arduino

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- STEAM lesson examples;
- Arduino hands-on: projects.

### Day 4 – 21<sup>st</sup>-century skills Arduino

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- 21st Century skills and creativity;
- Arduino Hands-on: playing around.





## Day 5 – Lesson project planning

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- Designing student-centered activities with Arduino
- Brainstorming and sharing ideas and activities to be implemented in class.

## Day 6 – Course closure and cultural activities

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

\*The schedule describes likely activities but may differ significantly based on the requests of the participants, and the trainer delivering the specific session. Course modifications are subject to the trainer's discretion. If you would like to discuss a specific topic, please indicate it at least 4 weeks in advance.

Our courses usually include two cultural activities. Further information is available on the webpage of each course location.

## About the provider

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