ERASMUS+ KA1 · TEACHER TRAINING COURSE

3D Printing and Robotics in Education: From Design to Real-World Solutions

7 Days • Heraklion, Crete • OID: E10020547

About the course

3D printing turns students' ideas into real objects and makes abstract concepts visible and hands-on. This practical course takes teachers from their first 3D models in Tinkercad to printing learning objects for science, maths and inclusive education, and then combines 3D printing with Arduino and micro:bit to create simple robots and smart devices.

Sustainability runs through the week: participants explore recycled materials, design for repair and eco-design, and work on a real-world challenge, a sustainable solution for their own school. A short introduction to AI and machine learning is also included.

Course at a glance

Duration: 7 training days

Location: ErasmusLearn Training Center, Heraklion, Crete

Language: English (B1 or higher recommended)

Who it's for: Primary, secondary, VET and adult teachers, STEM teachers, trainers

Level: Introductory, no CAD, electronics or programming experience needed

Certificate: Certificate of Attendance

Funding: Eligible for Erasmus+ KA1 (course fees)

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What you will learn

- Understand 3D printing technologies, materials and uses in education
- Create 3D models in Tinkercad and prepare them for printing
- Design learning objects for science, maths and geography
- Make tactile, accessible models for learners with special needs
- Code simple projects with micro:bit and Arduino
- Introduce AI and machine learning in an accessible way
- Apply eco-design, recycling and design for repair
- Combine 3D printing and robotics to solve real-world problems

How you will learn

Hands-on design and printing workshops, coding labs, team challenges and project-based learning, with peer feedback and group reflection. Participants design, print and build their own projects and leave with ready-to-use classroom ideas. Tools: Tinkercad, slicing software, 3D printers, micro:bit, Arduino and Teachable Machine.

Course language

English. B1 level or higher is recommended. Practical, hands-on activities make it easy for everyone to take part with confidence.

What's included

- Coffee Breaks that include traditional products.
- Guided tour of the Historical Center of the town.
- Dinner in a traditional restaurant in the town.
- Europass Mobility.
- A small gift with traditional Cretan products.
- Certificate of Attendance, for participants who attend at least 80% of the course.

Course Agenda

DAY 1 · Welcome & Orientation

- Welcome, practical arrangements and course timetable
- Presentation of participating organisations
- Icebreakers and introduction to the course

DAY 2 · Introduction to 3D Printing

- What is 3D printing: technologies and materials
- 3D printing in education: case studies
- First steps in Tinkercad: creating 3D models
- Exporting and preparing files for printing

DAY 3 · 3D Design for the Classroom

- 3D design principles and common terms
- Designing learning objects for science and maths
- Tactile 3D models for inclusive learning
- Slicing and printing your first model
- Included: guided cultural tour of the historical centre of Heraklion
- Included: dinner at a traditional Cretan restaurant

DAY 4 · Arduino, micro:bit & Intro to AI

- Block coding with micro:bit in MakeCode
- Arduino basics: circuits, sensors and mini-projects
- Intro to AI: simple machine learning with Teachable Machine

DAY 5 · Sustainable 3D Printing

- Recycled filaments and responsible material use
- Design for repair: printing spare parts
- Real-world challenge: a sustainable solution for your school

DAY 6 · 3D Printing Meets Robotics

- Combining 3D printed parts with Arduino
- Workshop: building a 3D printed educational robot
- Testing, improving and presenting your solution
- Turning your project into a classroom plan

DAY 7 · Next Steps & Certification

- Erasmus+: objectives, priorities, actions, budget and tips for applicants
- Planning follow-up and dissemination of learning outcomes
- Course evaluation and certificates

ErasmusLearn

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Ready to join? Book your place at www.erasmuslearn.eu

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