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Program Eco-Minds: AI-Powered Learning for a Greener World, 5 days

Málaga



Program Description

This 5-day intensive course focuses on STEM and environmental studies, with an emphasis on integrating Artificial Intelligence (AI) into classrooms through real-world, sustainability-focused projects.

Participants will use tools like Teachable Machine to explore how machine learning can raise awareness and generate solutions for environmental challenges. Through hands-on activities, collaborative design, and reflective practice, teachers will experience how AI can support competency-based learning and inspire students to become changemakers in their communities.

Competences

Digital Competence

- Understand the fundamentals of machine learning and AI.
- Use digital tools (Teachable Machine) to design and train basic AI models.
- Evaluate the ethical and environmental implications of AI technologies.

Environmental and Scientific Literacy

- Apply AI to real-world environmental issues such as waste classification or nature sound monitoring.
- Promote critical thinking around sustainability, ecosystems, and human impact.

Creativity and Innovation

- Promote critical thinking around sustainability, ecosystems, and human impact.
- Apply AI to real-world environmental issues such as waste classification or nature sound monitoring.

Pedagogical Design and Collaboration

- Co-create classroom-ready resources and learning sequences.
- Share and review ideas through peer feedback and collaborative planning.

Methodology

The course uses a learning-by-doing and project-based approach, supported by:

- Hands-on exploration of AI through visual and audio model training.
- Collaborative project design in small teams.
- Case studies and real-life examples linking AI and sustainability.
- Reflection sessions focused on classroom application, inclusion, and ethics.
- Tools: Teachable Machine, basic multimedia capture (images, sounds), shared digital docs.

No prior coding or AI experience required.

Results

By the end of the course, participants will:

- Understand the basics of AI and how it can be used to support environmental education.
- Design and train simple AI models using Teachable Machine (image/audio).
- Create at least two prototype projects: one for waste classification, and one for sound recognition in nature.
- Develop a ready-to-use, interdisciplinary lesson plan or project for their students.
- Gain confidence in guiding students through AI-based inquiry and sustainability challenges.
- Leave with a toolkit of digital resources, example projects, and a supportive teacher network.

Day by day Planning

Day 1 – Introduction to AI and Teachable Machine

9:00–10:00 Welcome + What is Artificial Intelligence? (with a focus on AI for the common good)
10:00–11:30 Real-world examples of AI in sustainability and environmental action
11:30–13:00 Introduction to Teachable Machine (guided tour and demos)
13:00–14:00 First hands-on activity: Train a basic image recognition model

Day 2 – Project: Waste Classification

9:00–10:00 Project design: Defining categories (waste types) and visual input
10:00–11:30 Collecting training data (images) and training the model
11:30–13:00 Testing and improving the model (addressing overfitting, diversifying data)
13:00–14:00 Prototype sharing + pedagogical reflections

Day 3 – Project: Nature Sound Classification

9:00–10:00 How audio recognition works in AI
10:00–11:30 Recording or sourcing nature sounds
11:30–13:00 Training with Teachable Machine (audio mode)
13:00–14:00 Testing + classroom application discussion

Day 4 – STEM + AI: Designing Interdisciplinary Projects

9:00–10:00 Project-based learning + AI integration
10:00–11:30 Inspiring examples and brainstorming session
11:30–13:00 Guided project design in teams (define objectives, plan activities)
13:00–14:00 Peer feedback round: Project idea sharing and review

Day 5 – Implementation & Assessment

9:00–10:00 How to document and present impactful projects
10:00–11:30 Designing assessment tools and rubrics (skills-based approach)
11:30–13:00 Preparing final presentations in teams
13:00–14:00 Final presentations + certificates + course closing