TRAINING COURSE

ADVANCED TECHNOLOGIES IN EDUCATION

3D PRINT, VR, AI, DRONES AND ROBOTICS

Digital School

Funded by the Erasmus+ Programme of the European Union

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Thank you for registering for our training courses!
Here you will find detailed information regarding the training course

1. Training Course Information

"Elevate Education: Unleashing Tomorrow's Classroom with AI, 3D, VR, Robotics, and Drones – Learn, Innovate, Soar!" Bridge the gap between traditional teaching methods and the transformative potential of emerging technologies.

Training Course: Advanced Technologies in Education
Course Code: DS12024
Programme: Digital School (Erasmus+).
Venue: Centro de Formación e Innovación de Inercia Digital.
Address: Plaza Tallista Miguel Hierro Número 9, A, 21007, Huelva, Spain.
Duration: 5 days courses (35 hours). According to the Flipped Classroom methodology, it will take 20 presential hours (during the morning, from 9:00 to 13:00), and 15 hours of self-learning out of this time slot.
Training fee covered: 100%
Special instructions: 100% presence is required.
Preliminary requirements: An A1 level (newcomer) in all of the DigCompEdu Framework competencies (Certification not needed).
Additional resources available: computers, Internet connection, digital projector, speakers, headphones, tutors, online platform with supporting materials, papers, and pens.
Proficiency profile: B1 – Integrator / B2 – Expert

Methods and schedule for evaluation: This training course will follow a Non-Formal methodology in every domain, in order to promote the interaction between learners and trainers as well as between students themselves. Different methods will be developed within the in-person sessions, giving special attention to the Case method, methodology based on project, learning by doing and the Interrogative one. The basic methodology of the course is the flipped one. It means that students will work on the Inercia Digital's online platform. It will be useful to download the learning and supporting materials, to participate in debate forums, to ask doubts, to interact with other students, to complete the required tasks for evaluation, and to do the final self-assessment of their achievement theoretical questionnaires. The learners will have access to the online platform at any moment, and they must spend almost 10 hours of dedication. All this provision is completed with in-person classes, in which different activities are carried out to definitively integrate conceptual, procedural and attitudinal course content. This method is based on some curriculum conditions, referring to both the methodology and the content of the courses, according to the DigCompOrg framework.

- Staff and learners are both creators of contents, as the courses are adapted depending on the specific learning objectives, context, pedagogical approach, and learner group. used Curricula are redesigned or reinterpreted to reflect the pedagogical possibilities afforded by digital technologies
- Content repositories are widely and effectively used. Intellectual property and copyright are respected. Digital tools and contents are licensed as required, although Open Educational Resources are promoted.

Evaluation: in order to guarantee the quality of our courses, evaluation is perceived as an extended process. This will mean the continuous evaluation of the learners in several aspects, which are discussed below:

Initial assessment: before the start of the course, participants will be evaluated on their willingness to participate, as well as on certain aspects related to the course organization.

Theoretical: The wide theoretical knowledge will be evaluated at the end of the course with a questionnaire that will be done on the online platform. The theoretical evaluation is the 40% of the final mark and it is compulsory in order to pass the course. Students' digital competence is developed across the curriculum, and that's why this evaluation will be used to define the proficiency profile of each participant, according to de DigCompEdu (Digital Competence Framework for Educators) system, proposed by the European Commission.

Practice: This training course is based on the Continuous Assessment. Therefore, the students will participate in the debates and sessions planned. The participation and realization of the sessions' tasks will be 60% of the final mark and it is compulsory in order to pass the course. In order to evaluate learners' participation and dedication, all the daily activities will be saved on the online platform. The tutor will write every evaluation of the sessions on the online platform to establish a continuous feedback system.

Final assessment: participants will be evaluated on their participation and own considerations and proposal.

Type of Certification of Attendance Awarded

- Certificate of attendance including description of training content and time input.
- Europass mobility certificates – to be issued by the applicant's NA.

General objective: To empower educators with a comprehensive understanding of advanced technologies, including AI, 3D printing, Virtual Reality, robotics, and drones in education. Participants will gain the knowledge, skills, and confidence needed to integrate these cutting-edge tools into their teaching practices, fostering an innovative and dynamic learning environment that prepares students for the challenges of the future.

Specific objectives:

- To understand the principles, applications, and potential impact of AI, 3D printing, Virtual Reality, robotics, and drones in education.
- To operate 3D printers, program robots, design VR experiences, and fly drones.
- To foster innovation and enhance the learning experience for their students across various subjects and educational levels.
- To critically evaluate the ethical considerations associated with the use of emerging technologies in education.
- To design and develop projects that showcase the integration of AI, 3D printing, Virtual Reality, robotics, or drones into educational settings.

Learning outcomes:

- Participants will be able to comprehend core concepts and discussing ethical integration in education.
- Participants will have the practical skills to operate 3D printing technology, understand its applications in education, and collaboratively design a 3D printing project suitable for integration into their respective curricula.
- Participants will be proficient in recognizing suitable virtual reality content for various educational levels and subjects, and they will have designed an immersive VR lesson plan, gaining hands-on experience with VR equipment and software.
- Participants will have acquired foundational knowledge about educational robotics, practical skills in basic coding and robot programming, and the ability to design and implement simple robotic projects in educational contexts.
- Participants will be proficient in understanding the applications of drones in education, adhering to safety regulations, and will have hands-on experience in flying drones. They will have collaboratively developed drone-based projects suitable for integration into their teaching practices.

Competences acquired by our learners:

Competences were designed and distributed according to what the European Commission establishes in the European Framework for the Digital Competence of Educators.

- To use digital technologies to engage in collaboration with other educators and professionals, sharing and exchanging knowledge and experience, and collaboratively innovating pedagogic practices.
- To organize digital content and make it available to learners, families and educators.
- To appropriately manage and orchestrate a digital teaching strategy, planning for and implementing digital resources in the teaching process, to enhance the effectiveness of teaching interventions.
- To use digital technologies and services to enhance the interaction with learners, individually and collectively.
- To use digital technologies to offer timely and targeted guidance and assistance, experimenting with and developing new forms and formats for offering guidance and support.

2. Training Course Programme

DAY 1. ARRIVAL. Understanding the Foundations of AI in Education (MONDAY)

09:00 - 09:15 Welcome. Greetings and introductions (meeting each other).

- Foster an understanding of the culture and mentality of the host country.

09:15 - 09:30 Presentation of the Training Course and Training Programme.

- Aim topics and methods. Importance of active participation

09:30 – 10:00 Presentation of the Moodle Platform.

- How to use the online platform. Online activities.

10:00 - 10.15 ***Break***

10:15 - 11:45 First: Introduction to AI in education.

11:45 - 12:45 Ethics in Educational AI: Main risks

13:00 End of the sessions (morning).

Activities on the online platform: Reading the content of the topic discussed and completing the required task on the platform (1 hours).

DAY 2. Exploring the World of 3D Printing in Education (TUESDAY)

9.00 - 9.15 Introduction to Artificial Intelligence (AI) in Education. Key concepts and applications of AI in the educational landscape.

9.15 - 10.30 First activity: Case studies showcasing successful AI implementations in education. Exploring AI tools for personalized learning.

10:30 - 10:45 Sharing. Group Conclusions.

10.45 - 11.15 ***Break.***

11:15 - 11:45 Applications of 3D printing in education: from prototypes to models.

11.45 - 12.45 Collaborative group projects: Ideation and planning. Creating a simple 3D print project.

12.45 – 13.00 Sharing. Group Conclusions.

13.00 End of the sessions.

Activities on the online platform: Reading the content of the topic discussed and completing the required task on the platform (4 hours).

DAY 3. Local Good Practices: Visits day (WEDNESDAY)

9.00 - 13.00 Participants will visit three different Local Strategic Partners of Inercia Digital, that develop Good Practices in Education in the field of Robotics, STEAM projects, digital skills education.

Activities on the online platform: Reading the content of the topic discussed and completing the required task on the platform (3 hours).

DAY 4. Artificial Intelligence & Drones in Education (THURSDAY)

09:00 – 09:20 Introduction to AI tools for the classroom.
09:20 – 10:30 Activity: Testing AI tools for personalized learning, assessment, and creativity.
10:30 – 10:45 Sharing. Group conclusions.
10:45 – 11:15 Break.
11:15 – 12:15 Introduction to drones: Safety, regulations, and educational applications.
12:15 – 12:45 Drone demonstration and simulation practice.
12:45 – 13:00 Wrap-up.
13:00 End of the sessions.

Activities on the online platform: Reading the content of the topic discussed and completing the required task on the platform (4 hours).

DAY 5. Robotics & Farewell Session (FRIDAY)

09:00 – 09:15 Introduction to educational robotics.
09:15 – 10:30 Hands-on robotics workshop: Basic programming and classroom applications.
10:30 – 10:45 Sharing.
10:45 – 11:15 Break.
11.30 – 12.30 Complete the assessment questionnaire course. Evaluation and conclusions of the course. Suggestions. Complete the quality evaluation questionnaires.
12.30 – 13.00 Delivery of certificates.

Activities on the online platform: Reading the content of the topic discussed and completing the required task on the platform (3 hours).

End of the course

All training courses and the evaluation processes coordinated and delivered by Inercia Digital are based on the UNE-EN-ISO 9001:2015, UNE-EN-ISO 14001:2015 and ISO/IEC 27001:2013 standards to achieve continuous improvement in the quality of the services provided and the activities developed by Inercia Digital, minimizing the environmental impact of our actions. Our courses in Digital and Entrepreneurial school are also based on the DigComp 2.0 conceptual reference model, Inercia Digital develops all courses under the European Reference Framework of Digitally Competent Educational Organisation (DigCompOrg), the European Framework for the Digital Competence of Educators (DigCompEdu), the EntreComp: Entrepreneurship Competence Framework, and the EntreCompEdu, Developing teachers' entrepreneurial education skills. Both are initiatives by the European Commission, Directorate-General for Education and Culture (DG EAC).

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