

TRAINING COURSE

EDUCATIONAL ROBOTICS



Digital School



Funded by the
Erasmus+ Programme
of the European Union



inerciadigital

Index

	Page
1. Training Course Information.	3
2. Training Course Programme.	8

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

1. Training Course Information

"Educational Robotics allows the active involvement in learning processes related to scientific literacy, enhancing research skills, problem solving, creativity... All this process, break down the barriers between multiple thoughts and structured and specialized learning."

Training Course: Educational Robotics

Course Code: LC041124

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 competences (Certification not needed).

Additional resources available: computers, Internet connection, digital projector, speakers, headphones, tutors, online platform with supporting materials, papers, 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 the 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: The objective of the course is to familiarize teachers and trainers with the potential of Educational Robotics, as a discipline that allows conceiving, design and develop projects to initiate students in the technological sciences, offering the possibility of treating them from transversely.

Specific objectives:

- To devise, build and program educational robots.
- To mainstream education processes through robotics.
- To learn about programming.
- To promote ICT teaching to boost the learning in the educational system.

Learning outcomes:

- Participants will build and program educational robots using LEGO.
- Participants will be able to teach and communicate the acquired knowledge.
- Participants will know how to devise specific robotic projects relating the objectives to the specific learning needs and context.
- Participants will be able to integrate digital tools into daily work.

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, parents and their educators.
- To appropriately manage and orchestrate digital teaching strategies, planning for and implementing digital resources in the teaching process, so as to enhance the effectiveness of teaching interventions.
- To use digital technologies and services to enhance the interaction with learners, individually and collectively, within and outside the learning session, as well as to enhance learner collaboration, enabling learners to use digital technologies as part of collaborative assignments, as a means of enhancing communication, collaboration and collaborative knowledge creation.
- 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. INTRODUCTION TO LEGO (MONDAY)

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

- Foster 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 the active participation

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

- How to use the online platform. Online activities.
- Introduction to the LEGO resources and materials. Fundamentals of robotics.

10:00 - 10:15 *Break.*

10:15 - 13:00 Cultural visit around Huelva

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 (4 hours).

DAY 2. ROBOTICS WITH LEGO (TUESDAY)

9.00 - 9.15 Welcome. Objectives Exhibition Session.

9.15 - 10.45 EV3 Projects.

- Electric motors, lecture and practical work.
- Analog sensors.

10.45 - 11.15 *Break.*

11.15 - 12.45 Lego Mindstorms

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 - 9:30 Traditional breakfast

9:30 - 13.00 Participants will know three local partners of Inercia Digital that are specialising in Robotics in School Education, to share good practices and put into practice the new knowledge in real scenarios.

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

DAY 4. LEGO (II) (THURSDAY)

9.00 - 9.30 Review of topics covered the previous day. Exhibition Session Objectives.

9.30 - 10.45 Data communication, logging and processing.

10.45 - 11.15 *Break.*

11.15 - 12.45 Programming.

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 5. PROJECTS. GOODBYE, EVALUATION AND DEPARTURE (FRIDAY)

9.00 - 9.30 Review of topics covered the previous day. Exhibition Session Objectives.

9.30 - 10.45 Design and sharing of own projects.

10.45 - 11.15 *Break.*

11.15 - 11.30 Sharing. Group Conclusions.

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.**

Goodbye and have a nice trip back!

End of the course

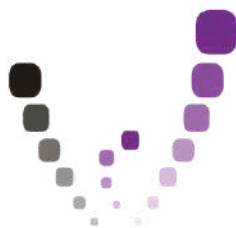
All training courses and the evaluation processes coordinated and delivered by Inercia Digital are based on the UNE-EN-ISO 9001:2015, UNE-EN-ISO 14001:2015 and ISO/IEC 27001:2013 standards to achieve continuous improvement in the quality of the services provided and the activities developed by Inercia 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).



Programa Operativo de
Fomento de Empleo
Digital Skills and Innovation



Digital School



inerciadigital

Boost your digital skills



contacta@inerciadigital.com



Erasmus+