



Objectives

- ✓ Provide teachers with practical ideas on how they can incorporate technology into their lessons;
- ✓ Promote basic training on topics such as controls, automatism, robots and programmable machines;
- ✓ Familiarize teachers with current use of robotics and coding in nowadays education trends;
- ✓ Providing innovative ways of teaching STEM (Science, Technology, Engineering and Mathematics) using problem solving, object analysis, use of scales...
- ✓ Promote new digital competences among teachers;
- ✓ Developing actively and constructively students' involvement in the work at class using coding and robotics;
- ✓ Enlarge teachers technical vocabulary and familiarize them with different programming languages;
- ✓ Exchanging experiences in cooperative and collaborative learning process as long as in creativity and innovation;
- ✓ Sharing of good practice in teaching and learning, using coding and robotics, enabling teachers to become confident and competent enough to create an interactive classroom experience for their students.

Target Group

The training course is addressed to primary and secondary school teachers, school directors and IT coordinators and all teaching staff in general who wish to acquire the needed skills for applying coding and robotics with educational purposes.

Language of course

This course can be provided in English.

Methodology

The approach used is highly practical, based on the expertise of the course trainers who have different years experience.

Practical simulations will be carried out for each topic..

The objective of the practical activities is the simulation of the use of robots and coding during lessons.



Programme

Day 1 – 4 hours

Introduction to Robots, automatic and control systems and programming languages

- Introduction and evolution of automatic systems
- Basic elements of control systems. Methods and examples
- Robot architecture: Main parts. Sensors and Actuators
- Flux diagrams. Introduction to coding. Practical exercises: mobile coding
- Practical use of automatic systems, sensors, controllers and actuators. Feedback concept
- Use of computer as element for coding and control. Control languages
- Design and construction of automatic systems and development of control programs.

Day 2 – 4 hours

Using BitBloq for coding Arduino microcontrollers I

- Introduction to coding with Bitbloq
- Use of sensors with Bitbloq: lights, infrared, ultrasound, joystick...
- Use of peripheral devices in Bitbloq: LEDs, LCD screens, buzzers...

Day 3 – 4 hours

Using BitBloq for coding Arduino microcontrollers II

- Variables and functions in Bitbloq
- Programming conditioning sentences and loops
- Programming communication for serial ports

Day 4 – 4 hours

Domotic applications and inventions. Robotics applications

- The alarm clock / the telegraph / the traffic light / presence detector / musical instrument / target shooting...
- Creating a printable robot / Robot that hide from lights / Robots that follow lines...

Day 5 – 4 hours

Professional visit

- Visiting a school in Valencia.
- Meeting with teachers and students.
- Evaluation and certification.



KA1 ERASMUS+ COURSES FOR TEACHERS AND TRAINERS
EDUCATIVE ROBOTICS AND CODING WITH ARDUINO

- Farewell dinner.

Fees

Course fee: 423,50 €/participant VAT included. Possibility of invoicing 350,00 €/participant if sending organisation has Intracomunitary VAT number.

- ✓ Preparation for the course
- ✓ Tuition
- ✓ Training materials
- ✓ Administration costs
- ✓ Organizational costs
- ✓ Professional visit to school
- ✓ City tour in Valencia
- ✓ Farewell dinner

Requirements

Minimum of 8 participants. For smaller groups, contact us.

Contact

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