Robotics Workshops for Educators

GENERAL INFORMATION

Trainer: Lovro Šverko, prof.

Number of participants: 12 people
Language: English

Highlights:

No prior knowledge in robotics is required. Participants will learn to solder electronics, basic robotics concepts, programming autonomous robots to perform various tasks. Participants will have the opportunity to observe and learn methodology required to teach robotics (project work based on solving problems).

COURSE CONTENT

Description:

Robotics workshops for educators are designed for project work with participants with the goal to encourage them to use robotics in their work with students.

Aims and objectives:

Encourage cooperation and teamwork among participants. Encourage the use of online problem-solving materials. Participants will know how to use Arduino based boards in robotics, with use of the sensors and actuators. Participants will be able to create an application in the C++ programming language for robots to perform various tasks. Participants will create various practical programming projects.

Learning outcomes:

Demonstration methods and assignment of project tasks will be used in the work with the participants, with which the participants will learn to collaborate, think creatively and apply existing and new knowledge when solving problems. Furthermore, participants will be encouraged to work in teams and to use online sources of knowledge when searching for a solution.

Target group:

Educators

Required language level of the participants: Basic English

Duration: 35 lessons, 7 days

Schedule*

SUNDAY	Get to know each other with trainers and the other participants and location of the course, warm up
MONDAY	**Basic robotics concepts (sensors, actuators, controllers)** • reading sensor values, • controlling actuators (motors), • basic programming.
TUESDAY	**Soldering** – soldering electronics components in order to create a simple robotics system.
WEDNESDAY	**Building autonomous robot 1/3** • building moving robot platform • adding simple sensor to robot pattern • programming moving methods • solving simple moving patterns • building obstacle avoiding robot
THURSDAY	**Building autonomous robot 2/3** • adding more sensors to robot platform • programming sensors • building line follower robot
FRIDAY	**Building autonomous robot 3/3** • adding more sensors to robot platform • programming autonomous mode • building line follower, maze solving, obstacle avoiding robot
SATURDAY	• Compulsory relationship building program, evaluation, handing over diplomas, • Closing of the course

* Notes:
• the schedule describes likely activities but may be modified
  in accordance with the requests and needs
  of the participants;
• presentations of the participants' schools may be divided
  up and take place after the breaks on each day
  of the course.

Readings, materials, learning resources and useful links:

https://www.instructables.com/howto/arduino+robots/

ADDITIONAL INFORMATION

Certificates awarded:
Certificate of Attendance, Europass certificate and/or
Learning agreement complement
Price: EUR   including course, Erasmus+
           documentation and a cultural activity
Location:
Date: