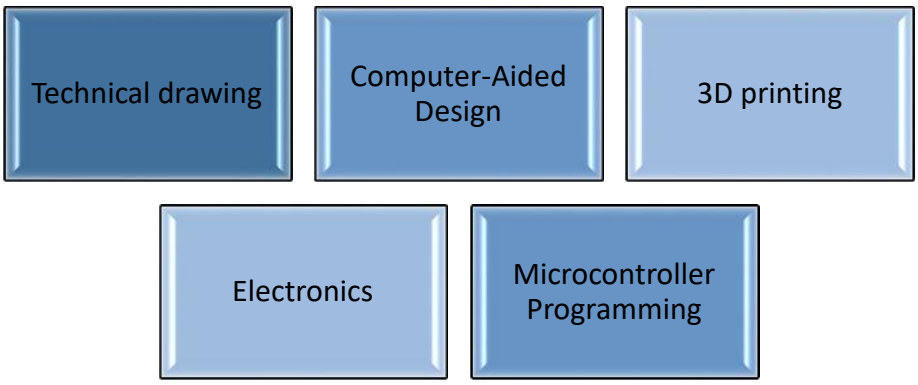
Course Description

This course will allow the acquisition of knowledge in the areas of Technical Drawing and Computer-Aided Design, 3D printing, Electronics and Microcontroller Programming.



It was designed especially for youngsters, yet it accommodates other targets that do not have knowledge in the referred areas. It was conceived within the reach of any individual who has interest for 3D printing and Robotiscs as a way of upskilling.

This course is divided into five modules described below in the structure of the course.

Requirements

For completing this course, you must have computer with Internet access and knowledge of English.

Learning Outcomes

At the end of the course, participants/ beneficiaries should be able to:

- draw a part/ object in 3D;
- create a file for printing in a 3D printer;
- identify some electronic componentes;
- assemble simple circuits;
- recognize the importance of algorithms and microcontrollers in Robotics;
- add programming to microcontrollers;
- understand the steps necessary to develop a robot.

This project has been funded with support from the European Commission. This publication and all its contents reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.
Project Reference 2016-1-UK01-KA202-024437

Structure of the Training Course on Robotics and 3D Printing

The course is set to 50 hours approximately and will follow the following structure:

Module	Description
Module 0	This module is an introduction to the robotics course. It aims at explaining the functioning of the course, so that the beneficiaries understand what they have to do at all moments.
Module 1	This module is an introduction to technical drawing. It focuses on the most important concepts concerning technical drawing and Computer-Aided Design. Methodology: simulation.
Module 2	This module is an introduction to 3D printing. It focuses on the procedures for printing a file using a 3D printer. Methodology: simulation.
Module 3	This module is an introduction to the concepts of electronics. It focuses on important concepts of electronics and the procedures for assembly of circuits step-by-step. Methodology: simulation.
Module 4	This module is an introduction to the concepts of Algorithmics and Microcontrollers. It describes the concepts of Algorithmics and Microcontrollers and how to programme circuits and microcontrollers step by step in tinkercad platform. Methodology: simulation.
Module 5	This is the last module. It has a more practical character and explains step by step the assembly of a robot based on the knowledge acquired in the previous modules. Methodology: assembly. Note: in this module there is the need to acquire material to produce the robot.

This project has been funded with support from the European Commission. This publication and all its contents reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.
Project Reference 2016-1-UK01-KA202-024437