

EDUTRONIX

Interactive Education Module for Mechatronics



Erasmus+



Project information

Project acronym	EDUTRONIX
Project title	Edutronix - Interactive Education Module for Mechatronics
Programme	Erasmus+
Key Action 2	Cooperation for innovation and good practices, Strategic partnerships for education and vocational training
Project number	2015-1-PL01-KA202-016561
Beneficiary organization	CKZ - Centrum Kształcenia Zawodowego w Wysokiem Mazowieckiem
Project web site	http://www.edutronix.eu
Report version	Part of Intellectual Output 05
Date of preparation	November 2017
Draft by	AIJU

This project has been funded with support from the European Commission. This report reflects the view only from the author and the Commission cannot be held responsible for any use which may be made of the information contained herein.

How to use Edutronix Platform?

The Edutronix Platform is divided in two parts:

- The **cover**, where we will find information about the Partners and the different Outputs.

Erasmus+
EDUTRONIX
Interactive educational module designed for teaching mechatronics

Project number: 2015-1-PL01-KA202-016561
October 2015 - September 2017

PROJECT DESCRIPTION IO 01 FINAL REPORT IO 02 FINAL REPORT IO 03 FINAL REPORT IO 04 FINAL REPORT IO 05 FINAL REPORT MEETINGS

Outputs

Project Information

WHAT WE OFFER COURSES OF ROBOTICS AND ARDUINO

The objective of the Edutronix project is to design, develop features, software and to create a ready-to-deploy and integrate into curriculum.

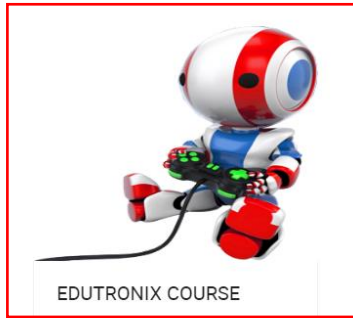
EDUTRONIX – Interaktywny moduł edukacyjny do nauczania mechatroniki w ramach programu Erasmus +

W październiku roku 2015 rozpoczęliśmy realizować międzynarodowy dwuletni program Erasmus + pod tytułem Akcja kluczowa 2: Współpraca na rzecz innowacji i wymiany dobrych praktyk, akcja: partnerstwa strategiczne, sektor: Partnerstwa strategiczne na rzecz kształcenia i szkoleń zawodowych.

Numer projektu: 2015-1-PL01-KA202-016561

Czas trwania projektu: październik 2015 - wrzesień 2017

Access to the Course



PARTNERS

(CKZ-PL) Centrum Kształcenia Zawodowego w Wysokiem Mazowieckiem

Centrum Kształcenia Zawodowego w Wysokiem Mazowieckiem is one of the most modern technical schools in northern part of the country. The school educates its students in many interesting and prospective departments on vocational and technical level, graduates gain not only necessary theoretical knowledge but also competences necessary for developing future careers. Although its history is not a very long one, as it dates back to 2002, the school can already boast about a range of achievements. It actively participates in various competitions, conducts charity events, organizes assemblies. In 2014 the school embarked on a new journey, Erasmus+ projects. Since then it has been successfully offering its students internships in countries like: Turkey, Portugal and Ireland. Another challenge taken up by the school authorities is Edutronix, a project designed to popularize and disseminate a branch of science, mechatronics.

The school offers modern, spacious and well equipped classes and laboratories. Students enjoy working with teachers, constantly upgrading their skills and the latest equipment meeting all the European standards.

Apart from focusing on technical peculiarities and solutions the school stands guards to tradition and moral values. It bears the honourable name of the Polish Home Army and pays attention to preserving its history and importance.

(AIJU-ES) Asociacion de Investigación de la Industria del Juguete, Conexas y Afines

AIJU research centre is a private, non-profit making organization aiming to boost research, development and technological innovation within toy and related industry, thus making it possible the achievement of a constant competitiveness increase in the sector. During 2014 the number of associated companies surpassed 500, most of them SMEs.

AIJU constantly adapts and evolves along with the industry of the region to provide them with timely and proper solutions. Therefore, AIJU does carry out a key role for the benefit of the regional industry since most companies are SMEs with limited possibilities to undertake the actions to achieve competitiveness and innovation by themselves.

AIJU capabilities are focused on toy and children's products industry and comprise disciplines such as materials and processes, rapid manufacturing and prototyping, logistics, environment, pedagogy/product, energy, social technology, innovation, management and toy safety regulations. In fact, AIJU was the first body recognized by the Spanish Government to carry out tests and laboratory reports according to the European Directive on safety of toys. Therefore, we support our associates through our four specific departments: Laboratory-Product Development Engineering, Management & Innovation, Pedagogy-Product and Training achieving a remarkable level of confidence and cooperation with our associates.

AIJU is a technology centre that is at the forefront of ICT technologies, with more than 70 professionals in our staff, AIJU has a multidisciplinary team that allows to cover projects from technological and social topics. It also provides a vision of the World of Work in educational projects, providing real case studies and adapted to reality.

Partners Information

ABOUT PROJECT

OBJECTIVES

The objective of the EDUTRONIX Project is to design, develop features, software and to create a ready-to-deploy and integrate into curriculum - the interactive educational module for technician of mechatronics during 24 months period.

It introduces new methods and tools for vocational training, which enable active cooperation between teachers and students and also more effective and practical than conventional, as well as more expressive and efficient than traditional use of technology in teaching.

Project Objectives

EXPECTATIONS

The project is expected to:

1. Design a model for teaching mechatronics (the constant on-line access).
2. Develop model assumptions used for research in the field of mechatronics education.
3. Design a model utility for companies.
4. Software and model a set of assumptions for vocational education with use model.
5. Preparation of interactive module and technical documentation.
6. Innovative implementation of interactive program in mechatronics education using module.



Edutronix Facebook Page

Regarding Product development: we customized products by means of rapid prototyping and additive manufacturing technologies for disabled, high tech sport articles, etc., graphic and industrial design, electronic prototypes development, moulds adjusting/adapting & functionality providing, etc.

(CIS-IT) Scuola per la Gestione D'Impresa

CIS - Scuola per la gestione di impresa- is the training and consultancy company of Unindustria Reggio Emilia; the Association of entrepreneurs of Reggio Emilia.

With a staff of 27, CIS has been confirmed as the key training company of the Reggio Emilia industrial system, one of the more competitive industrial districts in Italy in terms of export, medium-high tech specialisation and R&D intensity. The district is specialised in mechatronics which is one of the 5 smart specialisation of Emilia Romagna regions.

The main goal of CIS is to contribute to the development of entrepreneurship, competitiveness and innovation of regional enterprises through ad-hoc consultancy and specialized (vocational and corporate) training services that meet business needs. CIS designs and develops both market financed training packages (vocational and corporate intensive courses) and funded projects under national or EU resources. One of its most successful training packages is "Master International Business studies", a market based graduate course which has reached its 18th year of activity and is aimed at graduates for a career in commercial and international business departments.

CIS, in close collaboration with the Association of entrepreneurs and the University of Modena and Reggio Emilia designs and manages vocational and corporate training courses, dissemination activities and workshops aimed at expanding R&D opportunities for SMEs especially in an interregional and cross-border perspective.

CIS cooperates with all the organizations located in the Reggio Emilia area (NUTS 3 province, about 500 thousands inhabitants) in particular with the education system (technical and non-technical high schools, University of Modena e Reggio Emilia) and the local innovation supporting actors (like Reggio Emilia Innovazione, the local innovation agency) to foster a unique strategy devoted to promote the local manufacturing base and its key strategic specialization of mechatronics.

(PP-PL) Perfect Project Spolka z ograniczona odpowiedzialnoscia

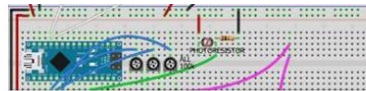
Perfect Project LLC is a training and research institution specialized in the field of education and training projects, both at a national and international level which employees have more than 11 years of experience in the field of higher education, vocational trainings, formal and non-formal education. Perfect Project LLC was created to support education especially through individually tailored trainings.

The three main pillars of the company's activities in this field are based on the fundamental aspects of education, namely:

1. Adult education - by regular and on demand training courses.
2. Secondary education - by supporting vocational training centers and schools in the region.
3. Development of civic attitudes and social activities through information, transfer of knowledge and preparing entities and individuals to greater absorption of external funds for their development.

One of the major goals of Perfect Project LLC is to improve accessibility and quality of vocational and adult trainings, by specially designed methodologies, procedures and methods. We are capable to create tailor-made training for every participant.

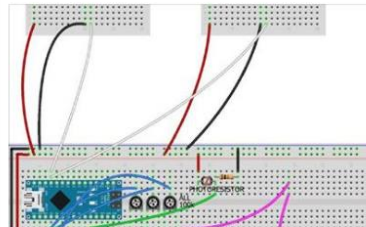
We also care about SMEs needs and their effective cooperation with education and higher education system with the positive effect on attractiveness of trainings at European level.



[PROJECT] Scary Eyes - Arduino controlled LED ...
#ShareTheScare this Halloween Visit our Halloween space and find out how...
ELEMENT14.COM

Me gusta Comentar Compartir

Edutronic
hace aproximadamente un mes



[PROJECT] Scary Eyes - Arduino controlled LED ...
#ShareTheScare this Halloween Visit our Halloween space and find out how...
ELEMENT14.COM

Me gusta Comentar Compartir

Album International Conference Edutronic Project.

Edutronic
hace aproximadamente 2 meses

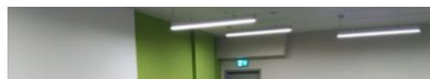
Multiplier Event held in Poland, 20-September-2017



10 Comentar 1

Edutronic
hace aproximadamente 2 meses

All is ready for the International Conference of the Edutronic Project
Todo está listo para la conferencia internacional del proyecto edutronic
Traducido





CONTACT US

You can connect sending a email to edutronixeu@gmail.com

Last News Section

Updates &
NEWS →

Europejski Tydzień Umiej@tnojci Zawodowych
w Centrum Kształcenia Zawodowego w
Wysokiem Mazowieckiem & Odkryj swój talent

Szkolenie Hiszpania

Szkolenie Włochy

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Co-funded by the
Erasmus+ Programme
of the European Union

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- The **course**, where we can train in the field of mechatronics:

The screenshot displays the Edutronix website interface. On the left is a 'NAVIGATION' menu with a tree structure: Home, Site pages, Current course, Edutronix Project (Participants, General, OUTPUTS, Topic 1: INTRODUCTION TO ARDUINO, Topic 2: PROGRAMMING, Topic 3: GRAPHICAL PROGRAMMING: MBOT, Topic 4: RESOURCES BEFORE TO START, Topic 5: BASICS EXERCISES, Topic 6: COMMUNICATION EXERCISES, Topic 7: PROJECTS, ANNEX 1 - SENSOR EXERCISES LIST, ANNEX 2: ACTUATORS EXERCISES LIST, ANNEX 3: LIST OF EXERCISES, ANNEX 4: COMPLEMENTARY DOCS, MATERIALS, Bibliography). The main content area shows 'News forum' and 'OUTPUTS' (Folders: 5) with 'Topic 1: INTRODUCTION TO ARDUINO' selected. Below this is a graphic for the 'INTRODUCTION TO ARDUINO COURSE' featuring the 'EDU TRONIX' logo and a robot icon. On the right, there are sections for 'SEARCH FORUMS' (with a search bar and 'Go' button), 'LATEST NEWS' (No news has been posted yet), 'UPCOMING EVENTS' (There are no upcoming events, Go to calendar...), and 'RECENT ACTIVITY' (Activity since Saturday, 18 November 2017, 5:11 PM, Full report of recent activity..., Nothing new since your last login).

Navigation Menu

Course Content

In the course we can find:

- ❖ All the **Outputs** of the project.
- ❖ 7 **Topics** with the **mechatronics training**.
- ❖ 4 **Annexs** with different **Exercises**.
- ❖ A **Material List**.
- ❖ A **Bibliography**.

Below is a detailed description of each section of the course.

➤ **Outputs:**

- You can find the all outputs of project.

The screenshot shows a navigation sidebar on the left and a main content area on the right. The sidebar, titled 'NAVIGATION', includes links for Home, Site pages, Current course, Edutronix Project, Participants, General, and a checked 'OUTPUTS' section. Under 'OUTPUTS', folders for OUTPUT 1 through OUTPUT 5 are listed. The main content area shows a 'News forum' icon at the top, followed by a horizontal line and the text 'Topic 1: INTRODUCTION TO ARDUINO ►'. Below this, the word 'OUTPUTS' is centered. A second horizontal line is followed by another 'Topic 1: INTRODUCTION TO ARDUINO ►' link and a 'Jump to...' dropdown menu.



For example, Output 2 view

This screenshot shows the same navigation sidebar as the previous image, but the 'OUTPUTS' section is not expanded. The main content area is titled 'OUTPUT 2' and contains a 'REPORT' section. Under 'REPORT', there is a folder icon and a PDF file icon labeled 'IO 02 report FINAL.pdf'.

➤ Topic 1 - Introduction to Arduino:

The screenshot shows a web-based course interface. On the left is a navigation sidebar with a tree view. The main content area displays the title 'Topic 1: INTRODUCTION TO ARDUINO' and a large graphic with the text 'INTRODUCTION TO ARDUINO COURSE' and 'EDU TRONIX' with a robot icon. Below the graphic is a 'Visit Us' link and a list of document icons: 'Cheat Sheet', 'Introduction to Arduino', and 'Questionnaire'. At the bottom, there are navigation arrows and a 'Jump to...' dropdown menu.

Current course ◀ OUTPUTS Topic 2: PROGRAMMING ▶

Edutronix Project

- Participants
- General
- OUTPUTS
- Topic 1: INTRODUCTION TO ARDUINO
 - Cheat Sheet
 - Introduction to Arduino
 - Questionnaire
- Topic 2: PROGRAMMING
- Topic 3: GRAPHICAL PROGRAMMING: MBOT
- Topic 4: RESOURCES BEFORE TO START
- Topic 5: BASICS EXERCISES
- Topic 6: COMMUNICATION EXERCISES
- Topic 7: PROJECTS
- ANNEX 1 - SENSOR EXERCISES LIST
- ANNEX 2: ACTUATORS EXERCISES LIST
- ANNEX 3: LIST OF EXERCISES
- ANNEX 4: COMPLEMENTARY DOCS
- MATERIALS
- Bibliography

Courses

Topic 1: INTRODUCTION TO ARDUINO

INTRODUCTION TO ARDUINO COURSE

EDU TRONIX

[Visit Us](#)

- Cheat Sheet
- Introduction to Arduino
- Questionnaire

◀ OUTPUTS Topic 2: PROGRAMMING ▶

Jump to...

- In this topic you have:
 - o An "Introduction to Arduino Course" PDF.
 - o A Cheat Sheet PDF.
 - o A Questionnaire of the previous PDFs.

➤ Topic 2 - Programming:

Current course

Edutronic Project

- Participants
- General
- OUTPUTS
- Topic 1: INTRODUCTION TO ARDUINO
- Topic 2: PROGRAMMING**
 - Introduction to Arduino Programming
- Topic 3: GRAPHICAL PROGRAMMING: MBOT
- Topic 4: RESOURCES BEFORE TO START
- Topic 5: BASICS EXERCISES
- Topic 6: COMMUNICATION EXERCISES
- Topic 7: PROJECTS
- ANNEX 1 - SENSOR EXERCISES LIST
- ANNEX 2: ACTUATORS EXERCISES LIST
- ANNEX 3: LIST OF EXERCISES
- ANNEX 4: COMPLEMENTARY DOCS
- MATERIALS
- Bibliography

Courses

◀ Topic 1: INTRODUCTION TO ARDUINO Topic 3: GRAPHICAL PROGRAMMING: MBOT ▶

Topic 2: PROGRAMMING

INTRODUCTION TO ARDUINO PROGRAMMING

EDU TRONIX

Introduction to Arduino Programming

◀ Topic 1: INTRODUCTION TO ARDUINO Topic 3: GRAPHICAL PROGRAMMING: MBOT ▶

Jump to...

- In this topic you have:
 - o An "Introduction to Arduino Programming" PDF.

➤ Topic 3 - Graphical Programming:

Current course

Edutronix Project

- Participants
- General
- OUTPUTS
- Topic 1: INTRODUCTION TO ARDUINO
- Topic 2: PROGRAMMING
- Topic 3: GRAPHICAL PROGRAMMING: MBOT**
 - GRAPHICAL PROGRAMMING: MBOT
 - mBlock Book
- Topic 4: RESOURCES BEFORE TO START
- Topic 5: BASICS EXERCISES
- Topic 6: COMMUNICATION EXERCISES
- Topic 7: PROJECTS
- ANNEX 1 - SENSOR EXERCISES LIST
- ANNEX 2: ACTUATORS EXERCISES LIST
- ANNEX 3: LIST OF EXERCISES
- ANNEX 4: COMPLEMENTARY DOCS
- MATERIALS
- Bibliography


Courses

◀ Topic 2: PROGRAMMING

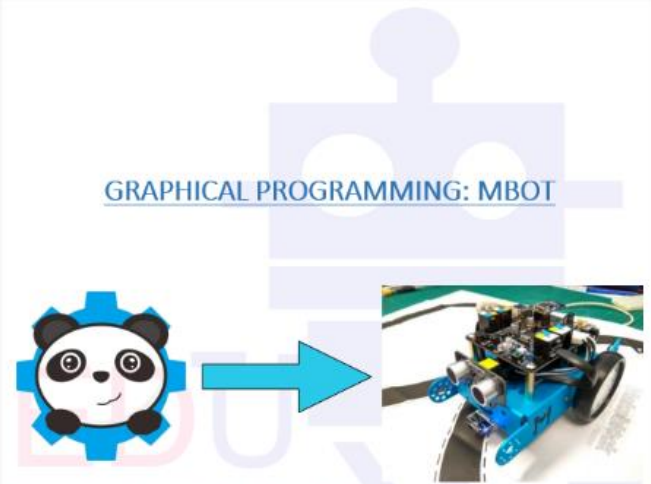
Topic 4: RESOURCES BEFORE TO START ▶

Topic 3: GRAPHICAL PROGRAMMING: MBOT



Edutronix car with arduino



GRAPHICAL PROGRAMMING: MBOT





-  GRAPHICAL PROGRAMMING: MBOT
-  mBlock Book

◀ Topic 2: PROGRAMMING

Topic 4: RESOURCES BEFORE TO START ▶

Jump to...

- In this topic you have:
 - o A demonstration video.
 - o A "Graphical Programming MBOT" PDF.
 - o An introduction to mBlock, for programming mBot PDF.

➤ Topic 4 - Resources before to Start:

Current course

Edutronix Project

- Participants
- General
- OUTPUTS
- Topic 1: INTRODUCTION TO ARDUINO
- Topic 2: PROGRAMMING
- Topic 3: GRAPHICAL PROGRAMMING: MBOT
- Topic 4: RESOURCES BEFORE TO START**
 - Components List
 - Libraries List
 - Download Libraries
 - STL Archives
- Topic 5: BASICS EXERCISES
- Topic 6: COMMUNICATION EXERCISES
- Topic 7: PROJECTS
- ANNEX 1 - SENSOR EXERCISES LIST
- ANNEX 2: ACTUATORS EXERCISES LIST
- ANNEX 3: LIST OF EXERCISES
- ANNEX 4: COMPLEMENTARY DOCS
- MATERIALS
- Bibliography

Courses

Topic 3: GRAPHICAL PROGRAMMING: MBOT

Topic 5: BASICS EXERCISES

Topic 4: RESOURCES BEFORE TO START

COMPONENTS LIST

- 1xMbot kit
- Some different value 1/4W resistors
- Arduino UNO board
- Protoboard
- LEDs
- Passive buzzer
- Potentiometers
- Stepper motor
- 6, 9 and 12 V power supply
- DC engine
- Decelerator DC engine
- H-bridge
- LCD with I2C converter
- LED RGB
- LED display
- 10K ohms resistor
- Force resistive sensor.
- Button
- switch
- LDR
- Temperature and relative humidity sensor
- Water level sensor
- PIR sensor
- Hall sensor
- Gas sensor (MQ-4)
- IR obstacle sensor
- Ultrasonic sensor
- Wireless transmitter and receiver
- RFID module
- HC-06 bluetooth module
- NODEMCU ESP866-ESP12 board
- Five or six servo-engines.
- Plastic or aluminium pieces to build the arm structure.
- Nuts and bolts to assemble the pieces.
- Arduino UNO board.
- Sensor Shield.
- Jumpers (male-female)
- 5V power supply or H-bridge to adapt the voltage.
- Five or six servo-engines.
- Plastic or aluminium pieces to build the arm structure.
- Nuts and bolts to assemble the pieces.
- Arduino UNO board.
- Sensor Shield.
- Jumpers (male-female)
- Car Structure kit


LIBRARIES LIST


- LiquidCrystal_I2C library
- Adafruit_NeoPixel
- DHT adafruit library
- NewPing library
- RC522_RFID-master
- pololu-cp2102-windows-121204 driver

WEBSITES ON WHICH YOU CAN BUY TOOLBOX ELEMENTS

- www.botland.com.pl
- www.tme.eu
- www.mageek.com.pl
- www.nettigo.pl
- www.abc-rc.pl

 Components List

 Libraries List

 Download Libraries

 STL Archives

◀ Topic 3: GRAPHICAL PROGRAMMING: MBOT





Topic 5: BASICS EXERCISES ▶

Jump to...

- In this topic you have:
 - A “Components List” PDF.
 - A “Libraries List” PDF.
 - Some **Libraries** for download.
 - Some **links** of websites where **buy toolbox elements**.
 - **STL Archives**.








NAVIGATION

Home

- Site pages
- ✓ Current course
 - ✓ Edutronix Project
 - 👤 Participants
 - General
 - OUTPUTS
 - Topic 1: INTRODUCTION TO ARDUINO
 - Topic 2: PROGRAMMING
 - Topic 3: GRAPHICAL PROGRAMMING: MBOT
 - ✓ Topic 4: RESOURCES BEFORE TO START
 -  Components List
 -  Libraries List
 -  Download Libraries
 -  STL Archives

STL ARCHIVES

STL Archives

- ▼ 
 -  Base Support.STL
 -  Car Support.STL
 -  Cover.STL
 -  Edutronix BASE v1.stl
 -  Edutronix BASE v2.stl
 -  MotherBoard.STL

➤ Topic 5 - Basics Exercises:

The screenshot displays a course navigation interface. On the left, a sidebar menu shows the course structure under 'Edutronix Project', with 'Topic 5: BASICS EXERCISES' selected. The main content area shows a list of exercises for Topic 5, with navigation arrows for 'Topic 4: RESOURCES BEFORE TO START' and 'Topic 6: COMMUNICATION EXERCISES'. A 'Jump to...' dropdown menu is visible at the bottom.

Exercise Title	Icon
1. Connecting a LED (Actuator)	Folder icon
1. Connecting a LED on Arduino	Document icon
2. Connecting a Button (Sensor)	Folder icon
2. Connecting a Button	Document icon
3. Capacitive Touch Sensor	Folder icon
3. Connecting a Capacitive Touch Sensor	Document icon
4. Connecting a Potentiometer (Sensor)	Folder icon
4. Connecting a Potentiometer	Document icon
5. Using Serial Port (Communication)	Folder icon
5. Using Serial Port (Communication)	Document icon
6. Connecting a Switch (Sensor)	Folder icon
6. Connecting a Switch (Sensor)	Document icon
7. Connecting a Buzzer (Actuator)	Folder icon
7. Connecting a Buzzer (Actuator)	Document icon
13. Connecting a Temperature and Relative Humidity...	Document icon
14. Connecting a PIR Sensor	Folder icon
14. Connecting a PIR Sensor	Document icon
15. Connecting a Hall Sensor	Folder icon
15. Connecting a Hall Sensor	Document icon
16. Connecting a Gas Sensor	Folder icon
16. Connecting a Gas Sensor	Document icon
17. Connecting a Water Level Sensor	Folder icon
17. Connecting a Water Level Sensor	Document icon
18. Connecting a Ultrasonic Sensor	Folder icon
20. Connecting a LED Display (Actuator)	Folder icon
20. Connecting a LED Display (Actuator)	Document icon
21. Connecting a LED RGB (Actuator)	Folder icon
21. Connecting a LED RGB (Actuator)	Document icon
22. Connecting a RGB Ring (Actuator)	Folder icon
22. Connecting a RGB Ring (Actuator)	Document icon
23. Connecting a Servo Motor (Actuator)	Folder icon
23. Connecting a Servo Motor (Actuator)	Document icon

- In this topic you have:
 - o Different **examples** of **connect sensors** and **actuators** to **Arduino**.

➤ Topic 6 - Communication Exercises:

Current course

Edutronix Project

Participants

General

OUTPUTS

Topic 1: INTRODUCTION TO ARDUINO

Topic 2: PROGRAMMING

Topic 3: GRAPHICAL PROGRAMMING: MBOT

Topic 4: RESOURCES BEFORE TO START

Topic 5: BASICS EXERCISES

Topic 6: COMMUNICATION EXERCISES

- 5. Using Serial Port
- 24. Wireless Controller
- 24. Wireless Controller
- 25. RFID
- 25. RFID
- 26. Bluetooth
- 26. Bluetooth
- 27. WI-Fi
- 27. WI-Fi

Topic 5: BASICS EXERCISES

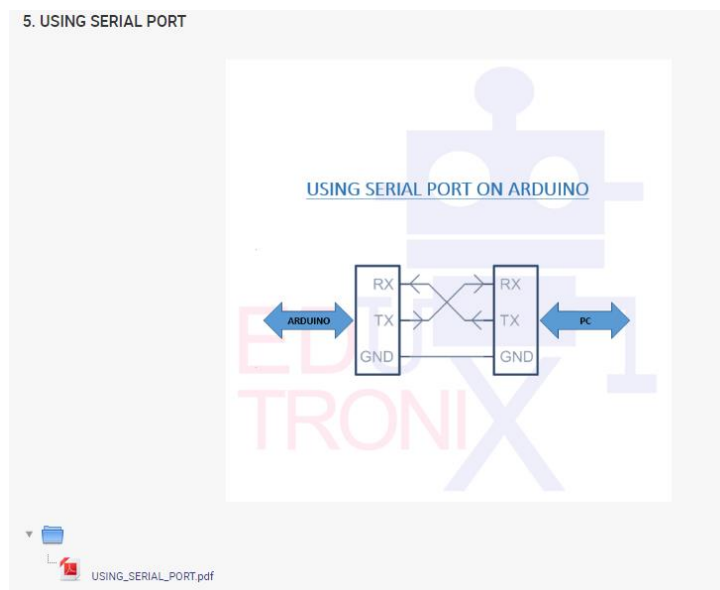
Topic 7: PROJECTS

Jump to...

Topic 5: BASICS EXERCISES

Topic 7: PROJECTS

- In this topic you have:
 - o Different examples of **communication** with Arduino.



➤ Topic 7 - Projects:

Current course

Edutronix Project

- Participants
- General
- OUTPUTS
- Topic 1: INTRODUCTION TO ARDUINO
- Topic 2: PROGRAMMING
- Topic 3: GRAPHICAL PROGRAMMING: MBOT
- Topic 4: RESOURCES BEFORE TO START
- Topic 5: BASICS EXERCISES
- Topic 6: COMMUNICATION EXERCISES
- Topic 7: PROJECTS**
 - 28. Candle Light
 - 28. Candle Light
 - 29. Push Button
 - 29. Push Button
 - 30. Ultrasound Buzzer
 - 30. Ultrasound Buzzer
 - 31. LCD Force Temperature
 - 31. LCD Force Temperature
 - 32. Sensors on LCD
 - 32. Sensors on LCD
 - 33. Thermostat
 - 33. Thermostat
 - 34. Parking Control
 - 34. Parking Control
 - 35. Simon Says
 - 35. Simon Says
 - 36. 6Servos ARM
 - 36. 6Servos ARM
 - 37. Bluetooth Car
 - 37. Bluetooth Car

Topic 7: PROJECTS

28. Candle Light

28. Candle Light

29. Push Button

29. Push Button

30. Ultrasound Buzzer

30. Ultrasound Buzzer

31. LCD Force Temperature

31. LCD Force Temperature

32. Sensors on LCD

32. Sensors on LCD

33. Thermostat

33. Thermostat

34. Parking Control

34. Parking Control

35. Simon Says

35. Simon Says

36. 6Servos ARM

36. 6Servos ARM

37. Bluetooth Car

37. Bluetooth Car

◀ Topic 6: COMMUNICATION EXERCISES ANNEX 1 - SENSOR EXERCISES LIST ▶

◀ Topic 6: COMMUNICATION EXERCISES ANNEX 1 - SENSOR EXERCISES LIST ▶

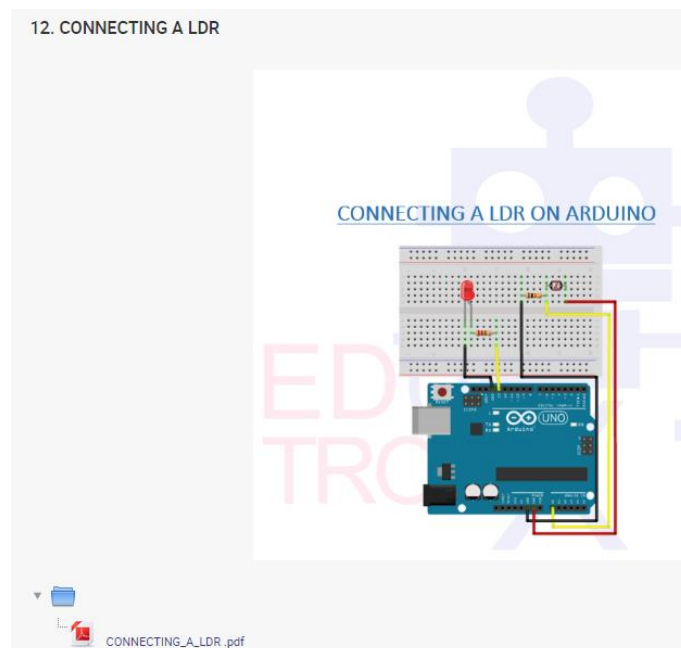
Jump to...

- In this topic you have:
 - o Some **projects** examples in **Arduino**.

➤ Annex 1 - Sensors Exercises List:

The screenshot shows a course navigation interface. On the left is a sidebar with a tree view containing: 'Current course', 'Edutronic Project', 'Participants', 'General', 'OUTPUTS', 'Topic 1: INTRODUCTION TO ARDUINO', 'Topic 2: PROGRAMMING', 'Topic 3: GRAPHICAL PROGRAMMING: MBOT', 'Topic 4: RESOURCES BEFORE TO START', 'Topic 5: BASICS EXERCISES', 'Topic 6: COMMUNICATION EXERCISES', 'Topic 7: PROJECTS', and 'ANNEX 1 - SENSOR EXERCISES LIST' (which is expanded). The expanded list includes: '2. Connecting a Button', '3. Capacitive Touch Sensor', '4. Connecting a Potentiometer', '6. Connecting a Switch', '11. Connecting a Force Sensitive Resistor', and '12. Connecting a LDR'. The main content area is titled 'ANNEX 1 - SENSOR EXERCISES LIST' and lists 19 numbered items, each with a folder icon: '2. Connecting a Button', '3. Capacitive Touch Sensor', '4. Connecting a Potentiometer', '6. Connecting a Switch', '11. Connecting a Force Sensitive Resistor', '12. Connecting a LDR', '13. Connecting a Temperature and Relative Humidity Sensor', '14. Connecting a PIR Sensor', '15. Connecting a Hall Sensor', '16. Connecting a Gas Sensor', '17. Connecting a Water Level Sensor', '18. Connecting a Ultrasonic Sensor', and '19. Connecting an Infrared Obstacle Detector Module'. Navigation arrows for 'Topic 7: PROJECTS' and 'ANNEX 2: ACTUATORS EXERCISES LIST' are visible at the top and bottom. A 'Jump to...' dropdown menu is located at the bottom center.

- In this topic you have:
 - Sensors Exercises.



➤ Annex 2 - Actuators Exercises List:

Current course

Edutronix Project

- Participants
- General
- OUTPUTS
- Topic 1: INTRODUCTION TO ARDUINO
- Topic 2: PROGRAMMING
- Topic 3: GRAPHICAL PROGRAMMING: MBOT
- Topic 4: RESOURCES BEFORE TO START
- Topic 5: BASICS EXERCISES
- Topic 6: COMMUNICATION EXERCISES
- Topic 7: PROJECTS
- ANNEX 1 - SENSOR EXERCISES LIST
- ANNEX 2: ACTUATORS EXERCISES LIST**

ANNEX 2: ACTUATORS EXERCISES LIST

- 1. Connecting a LED
- 7. Connecting a Buzzer
- 8. Connecting a DC Engine and Decelerator DC Engine
- 9. Connecting a LCD (I2C) Screen
- 10. Connecting a Stepper Motor
- 20. Connecting a LED Display
- 21. Connecting a LED RGB
- 22. Connecting a RGB Ring
- 23. Connecting a Servo Motor

Jump to...

- In this topic you have:
 - o Actuators Exercises.

21. CONNECTING A LED RGB

CONNECTING A LED RGB ON ARDUINO

EDUTRONIX

CONNECTING_A_LED_RGB.pdf

➤ Annex 3 - List of Exercises:

The screenshot shows a navigation interface for the 'Edutronix Project' course. On the left is a sidebar menu with the following items: Participants, General, OUTPUTS, Topic 1: INTRODUCTION TO ARDUINO, Topic 2: PROGRAMMING, Topic 3: GRAPHICAL PROGRAMMING: MBOT, Topic 4: RESOURCES BEFORE TO START, Topic 5: BASICS EXERCISES, Topic 6: COMMUNICATION EXERCISES, Topic 7: PROJECTS, and ANNEX 1 - SENSOR EXERCISES LIST. The main content area is titled 'ANNEX 3: LIST OF EXERCISES' and contains a list of 37 numbered exercises, each with a folder icon. The exercises are: 1. Connecting a LED (Actuator), 2. Connecting a Button (Sensor), 3. Capacitive Touch Sensor, 4. Connecting a Potentiometer (Sensor), 5. Using Serial Port (Communication), 6. Connecting a Switch (Sensor), 7. Connecting a Buzzer (Actuator), 8. Connecting a DC Engine and Decelerator DC Engine (Actuator), 9. Connecting a LCD (I2C) Screen (Actuator), 10. Connecting a Stepper Motor (Actuator), 14. Connecting a PIR Sensor, 15. Connecting a Hall Sensor, 16. Connecting a Gas Sensor, 17. Connecting a Water Level Sensor, 18. Connecting a Ultrasonic Sensor, 19. Connecting an Infrared Obstacle Detector Modul..., 20. Connecting a LED Display (Actuator), 21. Connecting a LED RGB (Actuator), 22. Connecting a RGB Ring, 30. Ultrasound Buzzer (Projects), 31. LCD Force Temperature (Projects), 32. Sensors on LCD (Projects), 33. Thermostat (Projects), 34. Parking Control (Projects), 35. Simon Says (Projects), 36. 6Servos ARM (Projects), and 37. Bluetooth Car (Projects). Navigation links for 'ANNEX 2: ACTUATORS EXERCISES LIST' and 'ANNEX 4: COMPLEMENTARY DOCS' are visible at the top and bottom of the main content area. A 'Jump to...' dropdown menu is located at the bottom center.

- In this topic you have:
 - o All the exercises.

➤ Annex 4 - Complementary Docs:

The screenshot shows a course navigation interface. On the left is a vertical menu with the following items: 'Current course', 'Edutronix Project', 'Participants', 'General', 'OUTPUTS', 'Topic 1: INTRODUCTION TO ARDUINO', 'Topic 2: PROGRAMMING', 'Topic 3: GRAPHICAL PROGRAMMING: MBOT', 'Topic 4: RESOURCES BEFORE TO START', 'Topic 5: BASICS EXERCISES', 'Topic 6: COMMUNICATION EXERCISES', 'Topic 7: PROJECTS', 'ANNEX 1 - SENSOR EXERCISES LIST', 'ANNEX 2: ACTUATORS EXERCISES LIST', 'ANNEX 3: LIST OF EXERCISES', 'ANNEX 4: COMPLEMENTARY DOCS' (highlighted), 'Frtizing', 'App Inventor', 'MATERIALS', and 'Bibliography'. The main content area is titled 'ANNEX 4: COMPLEMENTARY DOCS' and features a large red 'FRITZING' logo with the text 'Open-source software for documenting prototypes, learning interactive electronics and PCB production www.fritzing.org'. Below this is a section for 'App Inventor Beginner Tutorials' with the MIT Center for Mobile Learning logo. At the bottom, there are two PDF icons labeled 'Frtizing' and 'App Inventor', and a 'Jump to...' search box.

- In this topic you have:
 - o “**Fritzing**” PDF, an open source software for documenting prototypes and learning electronics.
 - o “**APP Inventor**” PDF, a software for develop applications that will connect with Arduino.

➤ Materials:

Current course Bibliography ▶

◀ ANNEX 4: COMPLEMENTARY DOCS MATERIALS

- Edutronix Project
 - Participants
 - General
 - OUTPUTS
 - Topic 1: INTRODUCTION TO ARDUINO
 - Topic 2: PROGRAMMING
 - Topic 3: GRAPHICAL PROGRAMMING: MBOT
 - Topic 4: RESOURCES BEFORE TO START
 - Topic 5: BASICS EXERCISES
 - Topic 6: COMMUNICATION EXERCISES
 - Topic 7: PROJECTS
 - ANNEX 1 - SENSOR EXERCISES LIST
 - ANNEX 2: ACTUATORS EXERCISES LIST
 - ANNEX 3: LIST OF EXERCISES
 - ANNEX 4: COMPLEMENTARY DOCS
 - MATERIALS**
 - Lesson_1_Voltage_Multiplier
 - Transistors
 - Transformers
 - Stabilizers
 - Servomechanisms
 - Sensors
 - Semiconductors

- Lesson_1_Voltage_Multiplier
- Transistors
- Transformers
- Stabilizers
- Servomechanisms
- Sensors
- Semiconductors
- Resistors
- Rectifier circuits
- Power cables
- Opto-isolators
- Numerical systems
- Microcontrollers (microprocessors)
- Induction coil
- Direct current engines
- Diodes
- Digital displays
- Control systems
- Control systems
- Capacitors
- Buttons

Numerical systems	Test_1_LESSON_VOLTAGE_MULTIPLIER
Microcontrollers (microprocessors)	Test_2_LESSON_TRANSISTORS
Induction coil	Test_3_LESSON_TRANSFORMERS
Direct current engines	Test_4_LESSON_STABILIZERS
Diodes	Test_5_LESSONS_SERVOMECHANISM
Digital displays	Test_6_LESSON_SENSORS
Control systems	Test_7_LESSON_SEMICONDUCTORS
Control systems	Test_8_LESSON_RESISTORS
Capacitors	Test_9_LESSON_RECTIFIER_CIRCUITS
Buttons	Test_10_LESSON_POWER_CABLES
BreadBoards	Test_11_LESSON_OPTO-COUPERS
Basic definitions of the scope of electrical engin...	Test_12_LESSON_NUMERICAL_SYSTEM
Analog	Test_13_LESSON_MICROCONROLLERS
Amplifiers	Test_14_LESSON_INDUCTION_COIL
Test_1_LESSON_VOLTAGE_MULTIP LIER	Test_15_LESSON_DIRECT_CURRENT_ENGINES
Test_2_LESSON_TRANSISTORS	Test_16_LESSON_DIODES
Test_3_LESSON_TRANSFORMERS	Test_17_LESSON_DIGITAL_DISPLAYS
Test_4_LESSON_STABILIZERS	Test_18_LESSON_CONTROL_SYSTEM
Test_5_LESSONS_SERVOMECHANI SM	Test_19_LESSON_CAPACITORS
Test_6_LESSON_SENSORS	Test_20_LESSON_BUTTONS
Test_7_LESSON_SEMICONDUCTOR S	Test_21_LESSON_BREADBOARDS
Test_8_LESSON_RESISTORS	Test_22_LESSON_BASIC_DEFINITIONS
Test_9_LESSON_RECTIFIER_CIRCUI TS	Test_23_LESSON_ANALOG
Test_10_LESSON_POWER_CABLES	Test_24_LESSON_AMPLIFIERS
Test_11_LESSON_OPTO-COUPERS	
Test_12_LESSON_NUMERICAL SYS...	

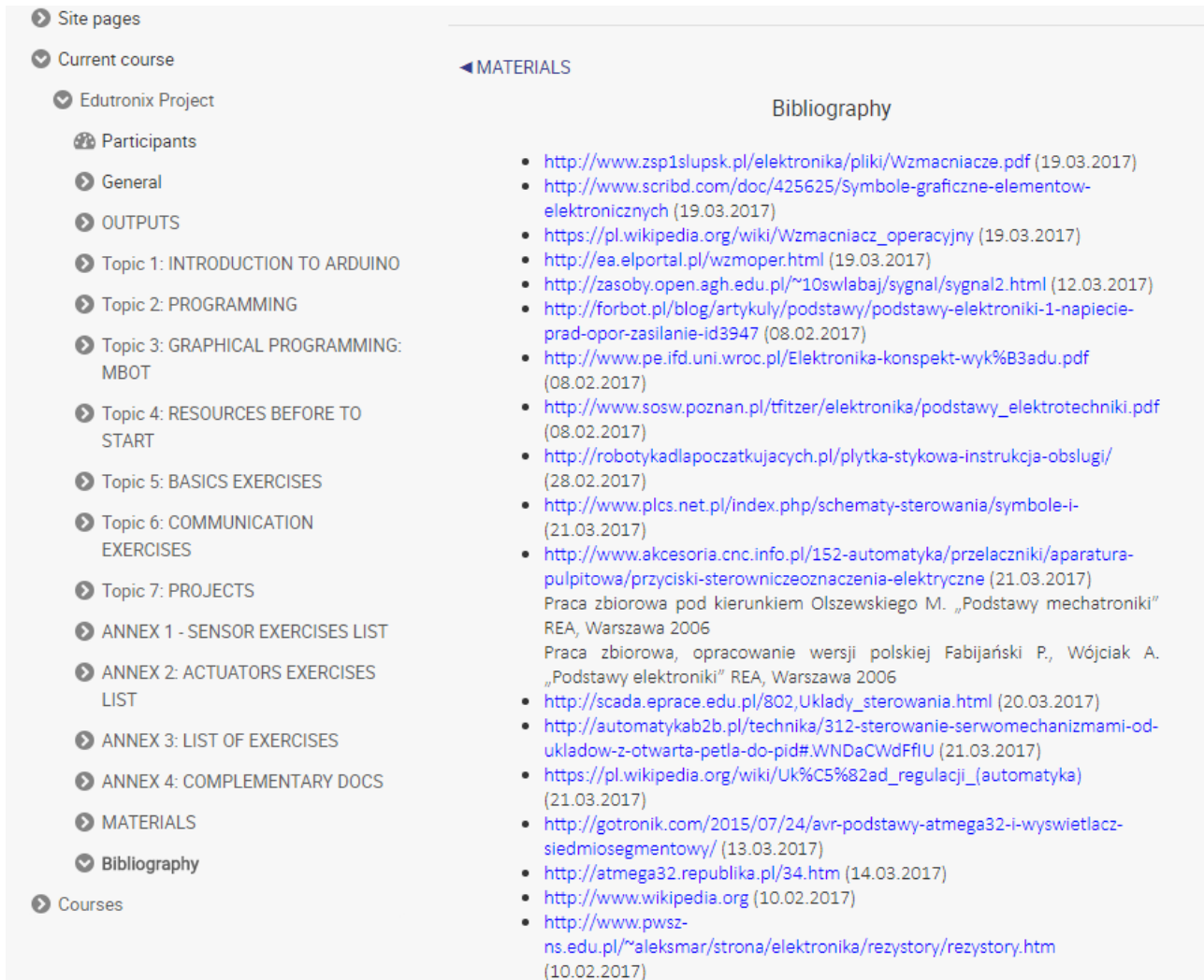
◀ ANNEX 4: COMPLEMENTARY DOCS

Bibliography ▶

Jump to... ▼

- In this topic you have:
 - o All the **materials** for advanced in the course.
 - o All the **tests** for verify that you are learning.

➤ Bibliography:



The screenshot shows a course website interface. On the left is a navigation menu with the following items: Site pages, Current course, Edutronix Project (with sub-items: Participants, General, OUTPUTS, Topic 1: INTRODUCTION TO ARDUINO, Topic 2: PROGRAMMING, Topic 3: GRAPHICAL PROGRAMMING: MBOT, Topic 4: RESOURCES BEFORE TO START, Topic 5: BASICS EXERCISES, Topic 6: COMMUNICATION EXERCISES, Topic 7: PROJECTS, ANNEX 1 - SENSOR EXERCISES LIST, ANNEX 2: ACTUATORS EXERCISES LIST, ANNEX 3: LIST OF EXERCISES, ANNEX 4: COMPLEMENTARY DOCS, MATERIALS, Bibliography), and Courses. The main content area is titled 'MATERIALS' and 'Bibliography'. It contains a list of 17 references with their URLs and dates.

◀ MATERIALS

Bibliography

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- <http://atmega32.republika.pl/34.htm> (14.03.2017)
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- <http://www.pwsz-ns.edu.pl/~aleksmar/strona/elektronika/rezystory/rezystory.htm> (10.02.2017)

- In this topic you have:
 - o All the **bibliography** of which the course has been composed.