

Robotics (Arduino - IOT) road map

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Sources :

- Arduino course :
<https://www.youtube.com/playlist?list=PLa4kqtM7SuFwpY8omRT32RK8kw1hDIGJ3>
 - Sensors playlist :
<https://www.coursera.org/specializations/c-programming>
 - Wireless communication :
<https://www.youtube.com/playlist?list=PLa4kqtM7SuFxli2UWCqhtzITk-WmPplvr>
 - Arduino tricks :
https://www.youtube.com/playlist?list=PLa4kqtM7SuFze99AP7FCqUJfASvJ5Cs_C
 - Arduino projects:
<https://www.youtube.com/playlist?list=PLa4kqtM7SuFz43Up7469EM8ID0UXPSTsK>
 - IOT Pixels'20 (Will be updated)
- 1-IoT introduction (Introduction course only - course one)
<https://www.coursera.org/specializations/iot>

2- Thing speak cloud (to store data in it)

<https://www.youtube.com/watch?v=nMWwqcn7ofw&list=WL&index=65>

3- RemoteXY (Analog & Digital) - to control devices remotely

Analog :

https://www.youtube.com/watch?v=uT3VVw_Hr0w&list=WL&index=67

Digital :

4- Google Assistant

<https://www.youtube.com/watch?v=q-HgyJXxyUM&list=WL&index=66>

Hint: While studying you need to recap on array, pointers, functions, And some other embedded c You can find it in the following playlist

https://www.youtube.com/watch?v=uT3VVw_Hr0w&list=WL&index=67

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Detailed Roadmap:

Task 1:

- Study from Video #1 to video #5 and from Video #17 to video #22 in the arduino course playlist

Task 2:

- Study how to deal with tinkercad
- Study proteus from the arduino course playlist
- Study motors ... each motor we will study (structure - wiring - coding) and these motors are:
 - 1- DC motors and how to control it using relay and H-bridge

- 2- Servo motors
- 3- Stepper motor

- Study (lm35 and Millis) from the arduino course playlist
- Search for many projects for the sessions.

Task 3:

- Study from Video #25 to video #30 and Video #32,35,45 in the arduino course playlist.(LCD - LM35 - Ultrasonic sensor - LDR - seven segment - Millis)
- Study color and IR sensors

Task 4:

- Study from Video #48 to video #51 in the arduino course playlist.(serial communication)
- Bluetooth module

Task 5:

- Study the Wireless communication from video #1 to #5
- Discuss robotics

#Task 6 :

- Study Serial Communication protocols
- Study nrf

#Task infinity :

- Complete the arduino course playlist.
- Study the tricks playlist .Try to build a project by yourself and you can use the projects playlist to help you.

#Task 7:

- Study IOT front the sources above and in the app

#finally :

Practice makes you perfect and in the sources there are many projects try to do it yourself ... then try to move to Embedded C