

# Roadmap

*Level 1*

# Arduino

<b>Introduction to Hardware &amp; Arduino IDE &amp; Code classification</b>
<b>Variables &amp; Conditions</b>
<b>Loops( for &amp; while)</b>
<b>Functions &amp; Libraries</b>
<b>Signals (Digital &amp; Analog)</b>
<b>Delay &amp; Timer</b>
<b>Inputs (Analog &amp; Digital)</b>
<b>Serial Communications</b>

<b>Sources</b>
<u><a href="#">Arafa Microsys (Arduino Course)</a></u>

# C++

<b>Introduction to C++ &amp; Installing IDE</b>
<b>Variables &amp; Operators (Arithmetic &amp; Logic Operators)</b>
<b>Data Input &amp; Conditions (if &amp; switch case)</b>
<b>Loops(for &amp; while)</b>
<b>Arrays</b>
<b>Functions</b>
<b>pointers</b>
<b>User defined Data types</b>

<b>Sources</b>
<a href="#">YouTube سي بلس للمبتدئين - (5766) CPP for beginners</a>
<a href="#">C++ - YouTube (5766) كورس البرمجة للمبتدئين بلغة</a>

# Electronics & PCB

Introduction to Electronics	Definitions (Voltage ,Current , Power ,....etc.)
	Resistors & Capacitors & Inductors
	Diodes & Bridge Rectifier
	Transformers & motors & Relays
	Transistors as Switch & Amplifier
Introduction to PCB	Introduction to the software & How to deal with it
	Basic PCB concepts (copper, Layers , holes & vias , .....etc.)
	Make a small project

Sources
<a href="#">YouTube كورس لتعليم تصميم الدوائر المطبوعة - PCB (5766)</a>
<a href="#">YouTube (5767) دورة الالكترونيات العملية :: 1- ما هي الكهرباء؟ -</a>
<a href="#">Complete PCB Design Course - YouTube</a>