

Electronics Lab: Tools and Equipment

#	Category	Equipment Name	Equipment Specifications	number
1	Student use	Digital Multimeter	AC/DC, Voltage, Current, Ohm, Capacitance, Frequency, Diode, Transistor, Audible Continuity, overload switch, Multi Tester with Backlit LCD, 2 sets of cables (one with point ends and one with corcodile clips ends)	30
2	Student use	Bench Power Supply	DC Power Supply Adjustable (0-30 V 0-10 A), Variable Switching Regulated Digital Power Supply with Alligator Leads UK Power Cord	5
3	Student use	Digital Storage Oscilloscope	2 Channels 100MHz 1GSa/s, LCD colour display or better, with cables, record length up to 40K	10
4	Student use	Breadboard	400, 2 Positive & Negative Power Lines on both ends, double sided tape on the bottom	200
5	Student use	regulated power supply for breadboard	3.5V, 5V Power Supply Module	5
6	Student use	jumper wires packs for breadboards	multicoloured wire packs of more than 50 per pack	100
7	Student use	Resistor pack	1%, 0 Ohm-1M Ohm (each pack of over 500 pieces)	50
8	Student use	LED pack	3mm and 5mm Diffused and Clear Assorted LED Kit 5 Colors with UV, RGB CA, Fast Flashing (each pack over 300 pieces)	25
9	Student use	Push Button Switch pack	Push Button Switch Micro, 6mm 4 Pin Micro Switches for breadboard, each pack over 200 pieces)	10
10	Student use	Potentiometer pack	mix of B1K B2K B5K B10K B20K B50K B100K B500K B1M Ohm knurled shaft linear rotary taper potentiometer, over 20 pieces per pack	10
11	Student use	Capacitor pack	0.47uF to 1000uF Electrolytic Capacitors Assortment Kit, about 200 pieces oer pack	50
12	Student use	Transister pack	2N2222-S9018 / BC327-BC558 NPN PNP Power General Purpose Transistors Assortment Kit, about 800 pieces per pack	25
13	Student use	Diode pack	1N4001~1N5819 Diode Assorted Kit, about 100 pieces paer pack	50
14	Student use	Logic Gate pack	each pack should include two of each: 74LS00 (4 NAND 2 inputs), 74LS02 (4 OR 2 inputs), 74LS04 (8 NOT), 74LS08 (4 AND 2 inputs), 74LS21 (2 AND 4 inputs), 74LS32 (4 OR 2 inputs), 74LS49 (BCD – 7 seg), 74LS73 (2* JK flip-flop), 74LS74 (2* D flip-flop), 74LS83 (4 bit adder), 74LS86 (4 XOR 2 inputs), 74LS193 (4-bit counter)	25
15	Student use	7 sigmant display	Uxcell a13071500ux0900 Common Cathode 10-Pin 1 Bit 7 Segment 0.56" Red LED Display Digital Tube (Pack of 10)	20
16	Projects	Arduino Engineering Kit	each kit should include: Boards: 1 Arduino MKR1000 Board, 1Arduino MKR Motor Shield, 1 Arduino MKR IMU Shield Electrical Components: 1 DC Motor, 2 Geared DC Motors with Encoder, 1 Standard Micro Servo (180 degrees), 1 Hall Sensor Module, 1 Ultrasonic Sensor Module, 1 Webcam, 1 LiPo Battery, 1 LiPo Battery Charger, 1 Micro USB Cable,1 3-pin to 4-pin Tinkerkit Module Cable, 1 3-pin Tinkerkit Module Cable Mechanical components: 3 Sets of Assembly Pieces, 2 Wheels, 1 Caster Wheel, 1 Timing Belt, 2 Timing Pulley , 2 DC Motor Mounting Brackets, 1 Metal Shaft (90mm), 2 Metal D Shafts (50mm), 2 Sets of Distance Spacers (6mm, 17mm), 2 Sets of M2 Bolts (10mm, 25mm), 3 Sets of M3 Bolts (10mm, 15mm, 25mm), 1 Set of M2 Nuts, 1 Set of M3 Nuts, 1 Set of M3 Lock Nuts with Nylon Insert, 3 Shaft Collars, 1 Propeller Adapter Screw, 2 Magnets Ø8 mm, 1 Thread 5m Documentation for Arduino Engineering Kit	10

17	Projects and Maintenance	Soldering Iron Station	75 Watt Soldering Iron - Temperature Range of 200°C ~ 480°C, Stainless Iron Holder, Solder Roll Holder, 220V Available	5
18	Projects and Maintenance	Soldering Accessories	Solder roll: 60/40 lead/tin.	100
19	Projects and Maintenance	Soldering Accessories	Brass tip cleaner sponge pack of dozens	15
20	Projects and Maintenance	Soldering Accessories	Desoldering Vacuum Pump Solder Remover	5
21	Projects and Maintenance	Soldering Accessories	Tip tinner 20g tins	20
22	Projects and Maintenance	Soldering Accessories	Helping hand stand with magnifying glass	5
23	Projects and Maintenance	Soldering Accessories	Diagonal cutting pliers, spring loaded, Blade Length: 0.63 Inch	5
24	Projects and Maintenance	Wire Stripper	Strip wire from 10 to 24 AWG with self-adjusting mechanism. Jaw Width 2 inches, built-in adjustable stopper	5
25	Projects and Maintenance	Needle-nose Pliers and Wire Cutter	5 inch	5
26	Projects and Maintenance	Glue sticks pack	190 mm, dozen in a pack	50
27	Projects and Maintenance	Screw driver kit	Professional Repair Tool Kit, for 8, 8 Plus/Smartphone/Game Console/Tablet/PC	5
28	Projects and Maintenance	Tweezer set	Precision Anti-static ESD Stainless Steel Tweezers for Electronics	5
29	Projects and Maintenance	4 axis CNC Machine	CNC router PCB drilling / laser engraving machine	2
30	Projects and Maintenance	Copper Board	Copper clad laminate PCB single sided and double sided board - each 12x12 inch	50
31	Projects and Maintenance	PCB bread board	Solderable PCB prototyping universal bread board 8.5 x 20cm -single sided	50
32	Projects and Maintenance	Ferric chloride	Copper etchant solution (1 litre)	3
33	Projects and Maintenance	Permanent marker	Permanent marker (0.6 mm line width) (Black or red)	10
34	Projects and Maintenance	Conductive ink pen	Conductive ink pen (1ml)	10
35	Projects and Maintenance	PCB Driller	High speed mini PCB drill 340W, stand table bench, 22mm Stroke clamping range 0.6 to 0.5 mm with Accessories (including drill bits from 0.5 mm to 0.9 mm)	2
36	Projects and Maintenance	Rework station	Temperature adjustable soldering, desoldering and SMD rework station with accessories (hot air gun nozzle, desoldering wick, soldering iron head, rosin, carving knife and welding aids)	5
37	Projects and Maintenance	FPGA development Board	Altera EP4CE6 FPGA Development Board with Accessories (including USB Blaster, USB cable for power supply, TFT Display, Ethernet module, connecting board, CH376S USB module, VGA Module, Camera Module)	2
38	Projects and Maintenance	Acrylic board	Transparent clear plastic board from 1mm to 3mm thickness (12 x 12 inch)	10
39	Projects and Maintenance	RF transmitter/receiver	433 MHz RF transmitter and receiver module	20