



*In Pursuit of Technology*

# Innovative Engineering Technologies

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## Basic Electronics with SMD Rework Course

### Time Table

	Theory	Practical
1 <sup>st</sup> Day	<b>Basic Theory of Electronics</b>  i. What is Voltage ii. What is Current iii. AC/DC Fundamental iv. Conductor and Semiconductor v. Ohms Law vi. Resister Color Cording & Reading	i. Electronic Technician useful common tool set ii. All type of Resisters identify and value testing. iii. Designing Voltage Divides & Resister Networks iv. What is AC step down Transformer v. AC wave from testing and monitoring via Oscilloscope
2 <sup>nd</sup> Day	<b>Passive Electronic Component measuring &amp; Identification</b> i. Resister (True hole type) ii. Capacitor (True Hole Type) iii. Inductors Inductors types Why useful Inductors	i. How to use Oscilloscope & Multimeter tools. ii. Four Color/Five Color Resister Value Reading. iii. Capacitor pf/ mf/ nf/ uf different Capacitors Value Testing.
3 <sup>rd</sup> Day	<b>SMD Electronics Basics</b>  i. SMD Resistors ii. SMD Capacitors iii. SMD Transistors iv. SMD ICs v. SMD Inductors vi. SMD Component Code Book	i. What is SMD Technology Why use & How to Use  ii. What is SMD Rework Hot air Station.  iii. How to Solder & Dis Solder SMD Component Using Hot air station & practice.
4 <sup>th</sup> Day	<b>What is PN Junctions</b> i. What is Diode ii. Diode Variations iii. What is Rectification  iv. PCB Designing, Drawing Using PCB Design Software	iv. AC to DC Ratification Circuit Testing using readymade Transformer.  v. Making Own Small PCB & Circuit and Soldering Practice.

5 <sup>th</sup> Day	<b>What is Transistor</b> i. NPN ii. PNP iii. Transistor Variations (FET, Mosfet....) iv. Power Dissipation	i. NPN & PNP Transistors Identification using Multimeter. ii. Identify Very type of Transistor Practically. iii. Identify advanced Transistor module (IGBT)
6 <sup>th</sup> Day	<b>Power Supply's</b> <b>What is Transformer</b> i. Theory & Calculation of Transformer ii. What is linear Power Supply	iv. Transformer Calculation & Own iii. Transformer Hand Winding & Transformer making iv. Serious, Shunt, Fixed, Zener, v. Regulators Theory part applied to Practical.
7 <sup>th</sup> Day	<b>Practical of Power Supply</b> <b>What is SMPS Power Supply</b> i. What is PWM Technology ii. What is Boost Convertor iii. What is Negative Convertor iv. What is Feed back Circuit	i. Practical of Transformer winding & Testing ii. Make own new variable Power Supply ,& Testing.
8 <sup>th</sup> Day	<b>What is Digital Volt Meter</b> i. What is Opto Electronic Devices ii. LED/Seven Segment iii. Opto Couplers	i. Making Digital Volt Meter for Own Variable Power Supply ii. How to Calibrate Volt Meter iii. Final assembly of own Variable Power Supply
9 <sup>th</sup> Day	<b>What is Operation in Amplifiers</b> i. Inverting Amplifier ii. Non Inverting Amplifier iii. Differential Amplifier iv. Summing Amplifier	i. Practical of Inverting & Non Inverting Op Amplifier & Gain Testing. ii. Practical of Op Amps useful circuits. (Ex: Temperature Controller & Gain Controller) ( OVP /UVP/OCP/TVC )
10 <sup>th</sup> Day	<b>What is the Radio Technology</b> i. What is Frequency ii. What is Frequency Spectrum iii. Radio Frequency Transmitting & Receiving iv. How FM Radio Receiver work	i. Making of SMD Digital Scan Radio Receiver & Digital Radio Practical ii. What is Bluetooth Wireless Technology iii. Making Bluetooth Wireless Power AMP
11 <sup>th</sup> Day	<b>Digital Electronics</b> i. What is Digital Circuit ii. Where are Digital Circuit iii. Why use Digital Circuit iv. What is IC v. What is Digital Gates	i. Testing All Logic gates Practically ii. Make Up - Down Digital Counter Using digital ICS iii. What is Schmitt Triger Which Useful Points we are Using this Technology
12 <sup>th</sup> Day	<b>Microcontroller (Basics Fundamental)</b> i. What is Micro Processor ii. What is Micro Controller iii. What is Micro Controller & Processor Program.	i. Choosing Microchip PIC Micro Controller Programming software & Writing Assembly Sample Program Using MPLAB Software. ii. Crating small demo board for LED Patten Running & Timing Controlling.

**Course Conduct by :- Mr.Indika Bandara**

**Course Duration :- 12 weeks (Saturday Full Day -9.00 AM to 5.00 PM)**

**Course Fee :- Rs , 35,000/-**

**IET Institute Student Registration Fee :- Rs. 1,000/-**

**Two Tea time and refreshment included**

A 'certificate of participation' will be issued to each participant. Individually practical attend and Practical Tools

A/C Class Room Facilities .

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