

Course code: Course Title	Course Structure			Pre-Requisite
EC103: Electronics	L	T	P	NIT

**Workshop I**

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**Nil**

**Course Objective:** The objective of the course is to impart practical knowledge to the students about electronic components, circuits and electronic instruments. This course on Electronic Workshop will enable students to get a good opportunity for beginning their professional career even at the end of first year.

S. No	Course Outcomes (CO)
CO1	Identify various electronic components and instruments.
CO2	Interpret the cause of error in an electronic board for possible fault in resistors and capacitors.
CO3	Differentiate between various ICs in terms of their identification numbers and functionalities.

S. No	Contents
UNIT 1	Basic components used in the Electronics circuits: Identification of various components being used in any electronic circuit such as resistor, capacitor, various diodes (p-n junction, Zenner, LED), transistors (BJT, MOSFET, FET), breadboard, potentiometer, Learn graphical symbols used to represent the various components, Computing the value of resistance, capacitance by its color code and value mentioned on the component.
UNIT 2	Instruments for measurement and analysis of Electronics circuits: Study the various control on the panel of a typical CRO, Multimeter, Take a picture of CRO, paste it in your file and write a brief description about CRO panel, Take a picture of Multimeter, paste it in your file and write a brief description about its feature, Testing of component such as resistance, capacitance and transistor as PNP or NPN, Gain value of transistor, connectivity of a wire using multimeter, Fault testing of the components such as resistor, capacitor and transistor, connectivity of wire using CRO.
UNIT 3	Instrument for generating the signals for the electronic circuits: Study the various control on the panel of a function generator and DC power supply, Take picture of function generator and DC power supply and paste it in your file and write a brief description about them, Using CRO and function generator perform jobs such as waveform analysis on CRO, Voltage measurement, frequency measurement, phase difference measurement etc. Using CRO and DC power supply perform jobs such as Voltage, current measurement, frequency measurement in a small circuit.

<b>UNIT 4</b>	Integrated circuit (IC) tester: Study the pin configuration of a given IC number, Study the function of IC tester, Testing of IC on the IC tester, Verify the truth table of various logic gates on the breadboard.
<b>UNIT 5</b>	Transformer and soldering iron: Study the transformer used in the electronic circuits, Learn the precautions while using a soldering iron, Learn the use of soldering iron.

## REFERENCES

S.No.	Name of Books/Authors/Publishers	Year of Publication / Reprint
1	Electronic Devices and Circuit Theory; R. L. Boylestad, L. Nashelsky, Prentice Hall.	2009
2	A Course In Electronic Measurements And Instrumentation; A. K. Sawhney, Dhanpat Rai & Co.	2015