



<b>I Year – II SEMESTER</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
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<b>ELECTRONIC WORKSHOP (ES1215)</b>					

**Prerequisite Course:** Basic knowledge on electrical circuits.

**Course Learning Objectives:**

**Course Outcomes:**

<b>CO</b>	<b>Course Outcomes</b>	<b>POs</b>
1	Identification of components of Electronic components	3
2	Understand various Laboratory equipment	2
3	Appreciate Soldering	2
4	Discuss PCB Layout	2
5	Appreciate CRO & Testing of Components	3

**Syllabus:**

- I. Identification of components
- II. Laboratory equipment
- III. Soldering practice
- IV. PCB Layout
- V. Testing of Components
- VI. CRO



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**I. Identification of components:**

- Resistors:- Types of Resistors, Value of Resistance using color code, DRBS.
- Capacitors:- Types of capacitors, value of capacitance using color code, DCBS.
- Inductors:- Types of Inductors, DLB
- Rheostats:- Types of Rheostats, Types of potentiometers, Relays.
- Switches:- Types of Switches.
- Cables: Types of Cables.
- Types of Instruments used.

**Identification of active elements.**

(Two Terminal, Three Terminal Devices)

- (SC diode, Zener diode, D.AC)
- Three Terminal Devices: BJT, UJT, SCR, FET, MOSFET, TRIAC.
- Digital and Analog ICs. (TO and Flat packages) IC regulators types.
- Testing of above components using Multi metros.

**II. Laboratory Equipment:**

A) Meters:-

- Types of Voltmeters, Types of Ammeters both Analog and Digital.
- Types of Multi meters (Analog & Digital)
- AVO Meters.
- FET input Voltmeter.

B) Laboratory Function Generators and Audio Oscillators.

C) Power Supplies.

D) RF generators.

E) Different Types of Transformers. (Power, AF, RF, etc.)

**F) Soldering practice**

Tools kit including soldering iron Tools Kit:

- Insulated nose player
- Insulated cutting player
- Screw driver kit
- Electrical tester
- Soldering iron, Lead, Flex



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**G) PCB layout and Design.**

Materials required, centimeter graph sheets, marker.

**H) Testing of Components.**

Active and Passive Components

**I) CRO**

Acquaintance with CRO Measurements on CRO