Programme	:	Diploma in **ET**/CE/EE//ME/MT/CM/IT/DDGM
Programme Code	:	01/02/**03**/04/05/06/07/08/16/**17**/21/22/**23**/24/26
Name of Course	:	Electronic workshop
Course Code	:	ET 282

Teaching Scheme:

	Hours /Week	Total Hours
Theory	--	--
Tutorial	**01**	**16**
Practical	**04**	**64**

Evaluation Scheme:

	Progressive Assessment	Semester End Examination			
		Theory	**Practical**	**Oral**	**Term work**
Duration	---	---	--	**3Hrs.** For batch of 20 students	--
Marks	---	---	--	**25**	**25**

Course Rationale:

To provide basic information regarding the materials used in Electronics Devices and components. It covers the types of various Electronics components and their constructions and also PCB manufacturing process.

Course Objectives:

After studying this course, the student will be able to

- Understand the different types of materials and components.
- Understand the constructions specification and application of different Electronics components.
- Understand the concept of PCB manufacturing.

Course Content:

Chapter No.	Name of Topic/Sub topic	Hrs	Marks
1.	**1.1 Passive components:** Introduction to Resisters, Capacitors & Inductors, Types of Resisters, Capacitors & Inductors, color codes, specifications, testing.	4	--
	1.2 Active components : Testing of semiconductor diode, zener diode, LED, BJT, FET, UJT,SCR by multimeter		
2.	**Switches & Relays** : Types of Switches & Relays, specifications, applications, testing.	2	--
3.	**Cable & connectors** : Types of Cable & connectors**,** applications, specification, testing.	2	--
4.	**Transformer** Types of Transformer**,** applications, specification , testing	2	--
5.	**Display Devices :** Types of Display Devices, applications, specification, testing.	2	--
6.	**Microphones & Speakers** Types of Microphones & Speaker, applications, specification, testing.	2	--
7.	**Introduction to PCB manufacturing** PCB layout drawing, etching, drilling, soldering.	2	--
	Total	16	--

List of Practical/Experiments/Assignment:

Sr. No.	Name of Experiment/Assignment
1.	Identify the different controls of electronic lab. equipment's (Analog multimeter, Digital multimeter, CRO, Function generator and IC Tester)
2.	Observe the square wave, triangular wave and sine wave generated by function generator and measure their amplitude and frequencies
3.	Identify various electronics components by physical observation.
4.	Test resistor, capacitors, inductor and diodes using CRO
5.	Verify values of resistors and capacitors by color codes and compare with actual values.
6.	Study specification of R, L and C from data manuals.
7.	Test various passive components by analog/digital multimeter.
8.	Identify various active components by physical observation.
9.	Test various active components by analog/digital multimeter.
10.	Write specification of active components from data books.
11.	Identify various switches and relays by physical observation.
12.	Test various switches and relays.
13.	Identify various cable and connectors by physical observation.
14.	Test various cable and connectors.
15.	Identify various transformers.
16.	Test various transformers.
17.	Identify various display devices by physical observation.
18.	Test various display devices.
19.	Identify various microphones and speakers by physical observation.
20.	Test various microphones and speakers.
21.	Test various types of ICs by IC tester.
22.	Practice of PCB layout drawing.
23.	Practice of etching.
24.	Practice of drilling.
25.	Practice of soldering.
26.	Continuity testing.
27.	Mini project (by individual student) : like regulated Power Supply(Fix & Variable), battery charger, fire alarm, Doorbell, clapswitch , running light , temperature controller etc.

- ***Visit to one PCB manufacturing industry**

Learning Resources:

Sr. No	Books/Software	Title	Publication
1	Dhir	Electronics components & Material	Tata Macgraw Hill
2.	Mrs. Madhuri Joshi	Electronics Material & components	
3.	Printed Circuit Boards	Walter C. Bosshart	Tata Macgraw Hill
4.	Video Clip for PCB manufacturing	http://www.youtube.com	Freeware
5.	Express PCB	http://www.expresspeb.com/ExpressPCBHtm/Download.htm	Freeware

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