Name of Faculty	:	Faculty of Engineering & Technology
Name of Program	:	Diploma Engineering (DE)
Course Code	:	2DCO02
Course Title	:	Electronics and Computer Workshop
Type of Course	:	Basic Engineering (BE)
Year of Introduction	:	2023-24

Prerequisite	:	Basic knowledge of computer
Course Objective	:	1. To familiarize students with various Electronic devices and their specifications. 2. Develop skill for Design and Testing of different types of Electronic subsystems using Analog and Digital IC's 3. Familiarize students with PCB layout tool to prepare PCB print for assigned project. 4. Develop skills of writing a structured technical document for project and its presentation. 5. Develop ability to diagnose faults and their rectification.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	Demonstrates various active and passive components used in circuit.
	CO2	Categorize various types of cable based on their characteristics and applications.
	CO3	Categorize various types of connectors based on their characteristics and applications.
	CO4	Operate Digital Multi-meter for various measurements
	CO5	Build any mini project on Arduino/Raspberry pi/PCB / Breadboard which enforces and Project based Learning

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	SEE	CIA	SEE	CIA	
0	0	6	3	0	0	70	30	100

Legends: L-Lecture; T–Tutorial/Teacher Guided Theory Practice; P – Practical, C – Credit, SEE – Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.))

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with CO
1	**Introduction of Electronic Components:** Resistor, Capacitor, Inductor, transformer, Voltage Source(AC 230 Volt)/Current ,Source, Battery ,Various types of Diodes including LEDs ,Transistors, IC, PCB, Breadboard, jumpers, switch, knob, Soldering, Desoldering Process	2	15%	CO1
2	**Introduction of Cables:** Twisted Pair Cable (UTP/STP) ,Fiber Optic Cable , Coaxial Cable , Ribbon Cable	3	20%	CO2
3	**Introduction of Connectors:** HDMI Port,RS-232 Interface,RJ-45 Connectors,USB Connectors,Audio-Video Jack,Mobile Connectors -Type C connector -Micro USB connector	3	15%	CO3
4	**Introduction of Measuring Instrument:** Digital Multimeter	2	20%	CO4
5	**Mini Project on IOT:** Mini Project based on PCB /Breadboard, Mini Project based on Arduino /Raspberry pi electronic board	5	30%	CO5

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	**20**	**30**	**30**	**20**	**0**	**0**

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Suggested List of Experiments/Tutorials

Sr. No.	Name of Experiment/Tutorial	Teaching Hours
1	Experiment to various electronic hardware components	4
2	Experiment to various types of cables	2
3	Experiment to various connectors/Interfaces	2
4	Experiment to Digital Multi-meter	4
5	Experiment on PCB (Mini Project)	6
6	Experiment on Arduino/Raspberry Pi based board (Mini Project)	6

Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	Arduino IDE

Suggested Learning Websites

Sr. No.	Name of Website
1	www.datasheetcafe.com
2	www.Williamson-labs.com
3	www.learnerstv.com
4	www.nptel.iitm.ac.in
5	www.khanacademy.com

Reference Books

Sr. No.	Name of Reference Books
1	Basic Electronic Engineering
2	Fundamentals of Electronic Devices and Circuits
3	Electronic Devices and Circuit
4	Electronic Devices and Circuit: An Introduction