KU1MDCELE116: Electronics for You

Semester	Course Type	Course Level	Course Code	Credits (L+T+P)	Total Hours (L+T+P)
1	MDC	100	KU1MDCELE116	2+0+1	30+0+30

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical	Tutorial	CE	ESE	Total	
2	2	0	25	50	75	1.5Hr

Course Description:

This course aims to introduce Electronic equipments used in daily life to students from various disciplines. People are always interacting with electronic gadgets such as mobile phones, office equipments and biomedical systems. A basic understanding of gadget operation will definitely improve their daily life at home, office and public places. This course gives an insight in this regard. At the end of this course students will be able to manage their electronic gadgets without external support.

Course Prerequisite: None

Course Outcomes:

CO No.	Expected Outcome	Learning Domains
1	Explain basic Electrical parameters	U
2	Explain the working of Audio systems, DTH, projectors and printers	U
3	Compare mobilephone generations	U
4	Explain the operation of biomedical instruments	U

5	Make use of these knowledge to set up a practical system	A

**Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)*

Mapping of Course Outcomes to PSOs

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7
CO 1	2						
CO 2	2						
CO 3	2						
CO 4	2						
CO 5	3	3	2	2			3

COURSE CONTENTS

Contents for Classroom Transaction:

MODULE	**UNIT**	**DESCRIPTION**	**HOURS**
1	**Module I**		**5**
	1.1	DC voltage and current , Ohms law, AC Voltage and current	
	1.2	Sine wave, peak r.m.s and average Voltage, frequency	
	1.3	Concept of DC power, AC power and power factor	
	1.4	Role of Resistor, Capacitor and Inductor in electronics	
2	**Module II**		**5**
	2.1	Working of Audio systems : PA system – Microphone, Amplifier, Loudspeakers	
	2.2	Block diagram and operation of DTH	
	2.3	Projectors – LCD and DLP, Printers: Dot matrix, Inkjet and Laser	

	2.4	LCD, Plasma & LED TV	

3	**Module III**		**10**
	3.1	Mobile phones – Cells, 2G, 3G, 4G & 5G standards and comparison	
	3.2	Block diagram of a mobile phone network	
	3.3	How call is established (emphasis on important registers in MSC)	
	3.4	SIM, IMEI number,SAR, Bluetooth & WIFI	

4	**Module IV**		**5**
	4.1	Cells and their structure, Cell as a bio-electric generator	
	4.2	Working of of ECG Machine	
	4.3	Pacemaker and Defibrillator	
	4.4	Working of X-Ray machine, Ultra sound scan and CT Scan	
5	**Teacher Specific Module**		**5**
	Directions: Teacher can design this module based on their expertise and demand from the students		
	Space to fill the selected area/ activity		

Essential Readings:

1. Basic Electronics Solid state : B. L. Theraja, S Chand Company Ltd, 5 th edition

2. A text book of Applied Electronics : R. S. Sedha, S Chand Company Ltd

3. R. P. Bali Consumer Electronics Pearson Education (2008)

4. R. G. Gupta Audio and Video systems Tata McGraw Hill (2004)

5. Wireless Communications: Theodore S. Rappaport; Pearsons

6. Khandpur, R.S., Handbook of Biomedical Instrumentation, McGraw Hill (2003) 2ndedn

Practicals:

1. Identify various sections of a practical DTH System
2. Pair an LED TV with a mobile pohone for Power point presentation
3. Connect a Project to a lap top
4. Connect a Printer with a Laptop (Install lnecessary driver softwares)
5. Setup a sound system having wireless microphone

Each laboratory experiment should be accompanied by a detailed lab note containing Aim, methodology and results obtained.

ASSESSMENT RUBRICS

	Marks
End Semester Evaluation	**50**
Continuous Evaluation	**25**