No	Information of every subject	
1	Unit name:	Applied Electrical Engineering
2	Code:	EP 21013
3	Classification:	Engineering subject
4	Credit value:	2.5
5	Semester/ Year Offered:	1/2
6	Pre-requisite:	N/A
7	Mode of delivery:	Lecture, Practical
8	Assessment system and breakdown of marks:	
	Test	20%
	Mid-term Examination	30%
9	Academic staff teaching unit:	
10	Course outcome of unit: In this course students will be able • Describe the characteristics of the electric components, electric circuits, ohm's law, KVL&KCL law, Mesh analysis, Loop analysis and Nodal analysis. • Calculate voltage, current, absorbed power, loop current and node voltage. • Explain practically relation among the voltage, current and resistance in the circuit by using ohm's law, KVL&KCL law.	
11	Synopsis of unit: The course covers the basic of electric energy and electrical concepts. The course introduces electric charges, electric current, voltage, dependent source, power and energy. Explain the ohm's law and the definition of Kirchhoffs Voltage Law and Kirchhoffs Current Law. The calculation of voltage and current values by using voltage division and current division methods. Moreover, state the fundamental of DC circuit analysis. This course benefits both electrical students and non-electrical students.	

	Topic: **Chapter Title**
	Chapter 1 BASIC CONCEPTS. Digit Grouping International System of Units Electric Charge Voltage Dependent Sources Power Energy Electric Current. **Chapter 2 RESISTANCE** Ohm's Law Resistivity Temperature Effects Resistors Resistor Power Absorption Nominal Values and Tolerances Color Code Open and Short Circuits Internal Resistance **Chapter 3 SERIES AND PARALLEL DC CIRCUITS** Kirchhoffs Voltage Law and Series DC Circuits Voltage Division Kirchhoffs Current Law and Parallel DC Circuits Current Division Kilohm-Milliampere Method Branches. Nodes. Loops. Meshes. Series- and Parallel-Connected Components **Chapter 4 DC CIRCUIT ANALYSIS** Cramer's Rule Calculator Solutions Source Transform at io n s Mesh Analysis Loop Analysis . Nodal Analysis Dependent Sources and Circuit Analysis
14	Main references: Basic Circuit Analysis, Second Edition, SCHAUM'S OUTLINES Basic Electrical Engineering, Second Edition, VN Mittle I Arvind Mittal
15	Additional references: Basic Circuit Analysis, Second Edition, JOHN O'MALLEY Basic Electrical Engineering, Second Edition, VN Mittle I Arvind Mittal

	JOB(1) **Ohm's Law**
	Objective: Deduce experimentally the relation between the voltage E, the current I and resistance R within an electric circuit.
	Apparatus: 1. Base station FET-BEE
	            2. Module EFT-BEE-M2
	            3. Multi-meter
	            4. Connecting wire

	JOB(2) **Resistor Color Code Reading** **Objectives** - Understand the construction of resistors and type of resistors. - Interpret the color code of resistors. - Measure the resistance of resistors and compare its code. - Use correct value of resistor in electric circuits. **Requirement:** number of resistor

	JOB(3) **Kirchhoff's Voltage and Current Law**
	Objective: To study Kirchhoff's Voltage and Current Law from the resistors in series and parallel circuits
	Apparatus: 1. Base station FET-BEE
	            2. Module EFT-BEE-M2
	            3. Multi-meter
	            4. Connecting wire

	JOB(4) **Current Division**
	Objectives: To determine the current passes through the resistor in parallel circuit by using current division method.
	Apparatus: 1. Base station FET-BEE
	            2. Module EFT-BEE-M2
	            3. Multi-meter
	            4. Connecting wire

	JOB(5) **Voltage Division**
	Objectives: To measure voltage across the resistor in series circuit by using voltage division method
	Apparatus: 1. Base station FET-BEE
	            2. Module EFT-BEE-M2
	            3. Multi-meter
	            4. Connecting wire