Course Number and Name

BEE 101 & Basic Electrical and Electronics Engineering

Credits and Contact Hours

2 & 30

Course Coordinator's Name

Mr.K.Sakthivel

Text Books and References

Text Books:

1. N.Mittal "Basic Electrical Engineering". Tata McGraw Hill Edition, New Delhi, 1990.
2. A.K. Sawhney, 'A Course in Electrical & Electronic Measurements & Instrumentation', Dhanpat Rai and Co, 2004.
3. 3. Jacob Millman and Christos C-Halkias, "Electronic Devices and Circuits", Tata McGraw Hill

References:

1. Edminister J.A. "Theory and Problems of Electric Circuits" Schaum's Outline Series.
2. McGraw Hill Book Company, 2nd Edition, 1983.
3. Hyatt W.H and Kemmerlay J.E. "Engineering Circuit Analysis", McGraw Hill International Editions, 1993.
4. D. P. Kothari and I. J. Nagrath" Electric Machines "Tata McGraw-Hill Education, 2004
5. Millman and Halkias, "Integrated Electronics", Tata McGraw Hill Edition, 2004.

Course Description

To understand the laws of electrical engineering.

Prerequisites	Co-requisites
+2 Level Mathematics, Physics	Nil

required, elective, or selected elective (as per Table 5-1)

Required

Course Outcomes (COs)

CO1: Understand the importance of being responsible, logical, and thorough.
CO2: Respond to the situations where short reports and instructions are required.
CO3: Explain "how things work", and what to suggest when "things don't work.
CO4: Develop our confidence and authority in the practical use of language.
CO5: Understand the importance of being responsible, logical, and thorough.
CO6: Able to Face interviews and competitive examinations.

Student Outcomes (SOs) from Criterion 3 covered by this Course

COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l
CO1	M	H	M			L		L	L			
CO2		H	M			L		L	L			
CO3		H	M			L		L				
CO4	M	H	M			L		L	L			
CO5	M	H	M			L		L				
CO6		H				L		L	H			

List of Topics Covered

UNIT I ELECTRIC CIRCUITS 6

Ohm's law – Kirchhoff's Laws, V – I Relationship of Resistor (R) Inductor (L) and capacitor (C).Series parallel combination of R, L&C – Current and voltage source transformation – mesh

current & node voltage method –superposition theorem –Thevenin's and Norton's Theorem - Problems.

UNIT II ELECTRICAL MACHINES 6

Construction, principle of operation, Basic Equations and applications - D.C.Generators and D.C.Motors**.** -Single phase Induction Motor - Single Phase Transformer.

UNIT III BASIC MEASUREMENT SYSTEMS 6

Introduction to Measurement Systems, Construction and Operating principles of PMMC, Moving Iron, Dynamometer Wattmeter, power measurement by three-watt meter and two watt method **–** and Energy meter.

UNIT IV SEMICONDUCTOR DEVICES 6

Basic Concepts of semiconductor devices **–** PN Junction Diode Characteristics and its Applications **–** HWR, FWR **–**Zener Diode **–** BJT (CB, CE, CC) configuration & its Characteristics

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UNIT V DIGITAL ELECTRONICS 6

Number system **–** Logic Gates **–** Boolean Algebra**–** De-Morgan's Theorem **–** Half Adder & Full Adder **–** Flip Flops.