Course Number and Name
BEE 201 - BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
Credits and Contact Hours
2 & 30
Course Coordinator's Name
Mr.K.Lingeswaran
Text Books and References

TEXT BOOKS:

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

REFERENCE BOOKS:

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

Course Description	
• To understand the laws of electrical engineering.	
Prerequisites	Co-requisites
Engineering Physics –I Engineering Mathematics I	Engineering Physics –II Engineering Mathematics II
required, elective, or selected elective (as per Table 5-1)	

Course Outcomes (COs)	
CO1	Students will gain knowledge regarding the various laws and principles associated with electrical systems.
CO2	Students will gain knowledge regarding electrical machines and apply them for practical problems.
CO3	Students will gain knowledge regarding various types semiconductors.
CO4	Student will gain knowledge digital electronics.
CO5	Student will gain knowledge on electronic systems.
CO6	Students will acquire knowledge in using the concepts in the field of electrical engg. projects and research.

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

COs/SOs	a	b	c	d	e	f	g	h	i	j	k
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 – Kirchoff'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 & Characteristics.

UNIT V DIGITAL ELECTRONICS 6

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

Flip Flops.