

SIR PADAMPAT SINGHANIA UNIVERSITY
UDAIPUR

COURSE PLAN

Subject : Basic Electrical & Electronics Engg.
Branch: CE & BT Semester: II Year: I
Course Code: EC 104 L-T-P-C: 3-0-1-4 w.e.f. 29.12.2009

Module Number	Module Heading	Related Topics	Number of class(es)
1	Basics of Circuit Analysis	DC and AC excitation	1
1	Basics of Circuit Analysis	Source conversion, Kirchoff's laws	1
1	Basics of Circuit Analysis	Series and parallel circuits, Mesh current and node voltage method of analysis	1
1	Basics of Circuit Analysis	Thevenin's and Norton's theorems	1
1	Basics of Circuit Analysis	Superposition theorem, Compensation theorem, Reciprocity theorem, Maximum power transfer theorem	3
2	Magnetic Circuits and Induction	Magnetic circuit	1
2	Magnetic Circuits and Induction	Magnetic effect of electric current, Faraday's Law of	1

		Electromagnetic Induction	
2	Magnetic Circuits and Induction	B-H relationship	1
2	Magnetic Circuits and Induction	Magnetization characteristics of magnetic Materials	1
2	Magnetic Circuits and Induction	Electromagnetic induction and force: self and mutual inductances, Energy stored in magnetic field	1
2	Magnetic Circuits and Induction	Transformer-Construction and Operation of Single Phase Transformer, EMF Equation	1
2	Magnetic Circuits and Induction	Voltage & Current relationship and Phasor	1
2	Magnetic Circuits and Induction	Diagram of Ideal Transformer, Hysterisis and eddy current losses	1
2	Magnetic Circuits and Induction	Efficiency of transformer and regulation, OC and SC tests , Efficiency calculation	1
3	Single Phase and Three Phase A.C. Circuits	Generation of Single Phase AC Voltage, EMF Equation, Average, RMS and Effective Values	1
3	Single Phase and Three Phase A.C. Circuits	R, L, C Series circuits, Parallel and Series-Parallel Circuits	1
3	Single Phase	Power and	1

	and Three Phase A.C. Circuits	Power Factor, Generation of Three-Phase, AC Voltage	
3	Single Phase and Three Phase A.C. Circuit	Delta and Star-Connection, Line & Phase Quantities	1
4	Semiconductor Theory & PN Junction Diodes	Construction of PN junction diodes, V-I characteristics, Diode resistances-transition & diffusion capacitances	1
4	Semiconductor Theory & PN Junction Diodes	Effect of temperature on diode characteristics, model of diode - diode specifications	2
4	Semiconductor Theory & PN Junction Diodes	Clipping & Clamping Circuits	1
4	Semiconductor Theory & PN Junction Diodes	Voltage multipliers Using diodes	1
5	Bipolar Junction and Field Effect Transistor	Construction of transistor, principle of transistor action, current components, input & output characteristics of a transistor in CE, CB, CC configurations	3
5	Bipolar Junction and Field Effect Transistor	Construction & characteristics of JFET, parameters of JFET	3
5	Bipolar Junction and	MOSFET – Depletion &	3

	Field Effect Transistor	Enhancement modes, FET in CS, CD Configurations	
6	Special Semiconductor Devices	Construction, Characteristics and applications of Zener diode	2
6	Special Semiconductor Devices	Varactor diodes, Construction & characteristics of Photodiodes	1
6	Special Semiconductor Devices	Photoconductive cell & Photovoltaic cell construction & working of LED & LCD, Photo-transistors, Solar-cell	3
Total Number of Classes: 40			