

GOVERNMENT ENGINEERING COLLEGE, DAHOD (018)

COMPUTER ENGINEERING DEPARTMENT (07)

SUBJECT: BASIC ELECTRONICS (2110016)

SEMESTER : SEM-II

FACULTY : VAISHALI NAYAK

TEACHING SCHEME			CREDITS C	EXAMINATION MARKS				TOTAL MARKS
L	T	P		THEORY MARKS		PRACTICAL MARKS		
				ESE (E)	PA (M)	ESE VIAVA (V)	PA (I)	
4	0	2	6	70	30	30	20	150

SR. NO.	TOPIC	HOURS
1	Circuit concepts :	6
	<ul style="list-style-type: none"> ➤ Electrical Quantities ➤ Lumped Circuit Elements ➤ Kirchhoff's Laws ➤ Meters and Measurements ➤ Analogy between electrical and other Non-Electrical Physical System ➤ A case study 	1 1 1 1 1 1
2	Circuit Analysis Techniques :	13
	<ul style="list-style-type: none"> ➤ Thevenin Equivalent circuits ➤ Norton Equivalent circuits ➤ Node-Voltage Analysis ➤ Mesh-Current Analysis ➤ Superposition and Linearity ➤ Wye-Delta Transformation ➤ Computer Aided Circuit Analysis ➤ A Case Study 	2 2 2 2 2 2 1
3	Analog Building Blocks and Operational Amplifiers Basic Ideas :	8
	<ul style="list-style-type: none"> ➤ The Amplifier Block ➤ Ideal Operational Amplifier ➤ Practical Properties of Operational Amplifiers ➤ Introduction to f/b ,concept and application of op amp, ➤ Non inverting amp^m, voltage follower, summing amp^m, ➤ Difference amplifier and subtractor , V to I, I to V converter ➤ Integrator, Differentiator ➤ Active filters, analog computer ➤ A case study 	1 1 1 1 1 1 1 1
4	Digital Building Blocks :	10
	<ul style="list-style-type: none"> ➤ Digital System Building Blocks, Number systems, Code conversion ➤ Logic operators and logic gates, Universal gates ➤ Boolean algebra, logic function 	1 1 1

	<ul style="list-style-type: none"> ➤ K-Map, Binary Adders ➤ Flip –Flops ➤ Digital system components, Counter ➤ Need of data converters ➤ Memory, Display devices ➤ Computer System, Computer Network ➤ A case study 	1 1 1 1 1 2
5	Signal Processing :	8
	<ul style="list-style-type: none"> ➤ Signal and Signal processing ➤ Spectral analysis using fourier series ➤ Filtering,Distortion and Equalization, Modulation ➤ Sampling andPpulse Modulation ➤ Modulation ,Sampling and Multiplexing ➤ Multiplexing systemsInterference and Noise 	2 2 1 1 1 1
6	Communication Systems :	8
	<ul style="list-style-type: none"> ➤ Introduction , Waves , Transmission Lines , Waveguides and Antenna Fundamentals ➤ Antenna fundamentals ➤ Analog Communication Systems, Amplitude modulation ➤ Frequency Modulation ➤ Phase Modulation ➤ Demod of FM, Radio and TV Broadcasting ➤ Introduction to TV ➤ Digital Communication Systems ➤ A case study 	1 1 1 1 1 1 1 1
7	Basic control systems.	6
	<ul style="list-style-type: none"> ➤ Feedback Control Systems(open loop, close loop system) ➤ Introduction to block diagrams ➤ Steady state error, Transient response ➤ P-I-D controller ➤ Digital Control Systems ➤ A Case Study 	1 1 1 2 1
TOTAL :		50 HOURS

Reference Books:-

1. Introduction to Electrical Engineering, M S Sarma, Oxford University Press.
2. Network Analysis and Synthesis, U.A.Patel, Mahajan Publication.
3. Op-amp and linear integrated circuit, Ramakant A. Gayakwad, Prentice Hall India.
4. Digital Logic Design ,A.Anand Kumar ,Prentice Hall India.
5. Electronics Communication system , kennedy davis, Tata McGraw Hill
6. Control system,