

PTSC-7.1

"PVCNSSK" GOVT. POLYTECHNIC BILASPUR at KALOL
PLANNED THEORY SYLLABUS COVERAGE

GPB		Department: Applied Sciences & Humanities.		Subject: FEEE		
SYLLABUS COVERAGE		Sem. & Branch :2 nd & EE & ME		Duration : 3years		
		Total Periods: Theory:56				
Sr No	Period No.	Topic	Details	Instruction Reference	Additional Study Recommende	Remarks
1.	10(1-10)	Overview of Electronic Components & Signals	Passive Active Components: Resistances, Capacitors, Inductors, Diodes, Transistors, FET, MOS and CMOS and their Applications. Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values, different types of signal waveforms, Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources.			
2.	08(11-18)	Overview of Analog Circuits	Operational Amplifiers-Ideal Op-Amp, Practical op amp, Open loop and closed loop configurations, Application of Op-Amp as amplifier, adder, differentiator and integrator.			
3.	09(19-27)	Overview of Digital Electronics	Introduction to Boolean Algebra, Electronic Implementation of Boolean Operations, Gates-Functional Block Approach, Storage elements-Flip Flops-A Functional block approach, Counters: Ripple, Up/down and decade, Introduction to digital IC Gates (of TTL Type).			
4.	10(28-37)	Electric and Magnetic Circuits	EMF, Current, Potential Difference, Power and Energy; M.M.F, magnetic force, permeability, hysteresis loop, reluctance, leakage factor and BH curve; Electromagnetic induction, Faraday's laws of electromagnetic induction, Lenz's law; Dynamically induced emf; Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.			

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5.	12(38-49)	A.C. Circuits:	Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form Factor Peak Factor, impedance, phase angle, and power factor; Mathematical and phasor representation of alternating emf and current; Voltage and Current relationship in Star and Delta connections; A.C in resistors, inductors and capacitors; A.C in R-L series, R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.			
6.	7(50-56)	Transformer and Machines:	General construction and principle of core and shell type of transformers; Emf equation and transformation ratio of transformers; Auto transformers; Basic principle of Electromechanical energy conversion.			

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DATE <u>29/01/24</u>	