



**Course Outcomes &CO-PO-PSO Mapping and Justification**

Subject	ANALOG & DIGITAL ELECTRONICS	18CS32
<b>COURSE OUTCOMES:</b>		
CO No.	On completion of this course, students will be able to:	Cognitive Level
18CS33.1	Understand the concepts of BJT, Amplifiers and Converters.	L2
18CS33.2	Construct Algebraic equations using Karnaugh maps, Q- method and Petric method.	L3
18CS33.3	Construct Combinational circuit, multiplexers, Hazards, Decoders and Encoders.	L3
18CS33.4	Understand VHDL and Filp-flops.	L2
18CS33.5	Design Registers, Counters, Melay and Moore Sequential circuits.	L6

**CO-PO-PSO MAPPING**

CO No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
18CS33.1	2	1	1	-	-	-	-	-	-	-	-	2	-	-	2
18CS33.2	3	2	2	-	-	-	-	-	-	-	-	2	-	-	2
18CS33.3	3	2	2	-	-	-	-	-	-	-	-	2	-	-	2
18CS33.4	1	1	1	-	-	-	-	-	-	-	-	2	-	-	2
18CS33.5	2	2	2	-	-	-	-	-	-	-	-	2	-	-	2
<b>Avg. Mapping</b>	<b>2.0</b>	<b>1.4</b>	<b>2.0</b>	<b>-</b>	<b>2.0</b>	<b>-</b>	<b>-</b>	<b>2.0</b>							

## CO-PO-PSO JUSTIFICATION

CO No.	PO/PSO	CL	Justification
18CS33.1	PO1	2	Moderately mapped as students can able to gain the knowledge on Photodiodes, Light Emitting Diodes and photocouplers ,BJT Biasing.
	PO2	1	Slightly mapped as students will be able to analyze the Operational Amplifier Application Circuits.
	PO3	1	Slightly mapped as students will be able to design Biasing, Current-to-Voltage and Voltage-to-Current Converter , Regulated Power Supply Parameters, adjustable voltage regulator ,D to A and A to D converter.
	PO12	2	Moderately mapped as students will be able to apply the concept of Oscillator, voltage regulatorsreal world problems.
	PSO3	2	Moderately mapped as students will be able to apply the concept of Diodes, oscillators and regulators in embedded systems.
18CS33.2	PO1	3	Strongly mapped as students can able to gain the knowledge on logic design and Basic Mathematics knowledge such as Boolean algebra, the characteristics equation for sequential circuits using flip flop Boolean equations for SOP and POS, entered variable Mapping and Q-M method.
	PO2	2	Moderately mapped as students can able to analyze a given problem statement for Kmaps and Quine Mcluskey to simplify and design logic circuits.
	PO3	2	Moderately mapped as students can able to design Boolean equations for SOP and POS expressions , Entered variable Mapping and Q-M method.
	PO12	2	Moderately mapped as students can able to apply the concepts of Kmaps in digital computers.
	PSO3	2	Moderately mapped as students can able to analyze the fundamentals of SOP and POS for designing logic circuits in digital computers.
18CS33.3	PO1	3	Strongly mapped as students need the knowledge of combinational circuits such as multiplexers, adders ,subtractors in design of digital circuits
	PO2	2	Moderately mapped as students able to analyze a given problem statement for combinational circuit using Boolean algebra and Kmaps as a tool to simplify the logic circuits.
	PO3	2	Moderately mapped as students able to design a given problem statement for combinational circuit using Boolean algebra and Kmaps as a tool.
	PO12	2	Moderately mapped as students can able to analyze the concepts learnt of combinational circuit in continuing professional development and new

			developments.
	PSO3	2	Moderately mapped as students can able to analyze the fundamentals combinational circuit for writing the programs to build basic application.
18CS33.4	PO1	1	Slightly mapped as students need the knowledge of combinational circuits such as Flip-Flops in design of digital circuits
	PO2	1	Slightly mapped as students able to analyze a given problem statement for combinational circuit using Flip-Flops and VHDL as a tool to simplify the logic circuits.
	PO3	1	Slightly mapped as students able to design a given problem statement for combinational circuit using Flip-Flops and VHDL as a tool.
	PO12	2	Moderately mapped as students can able to analyze the concepts learnt of combinational circuit using HDL in continuing professional development and new developments.
	PSO3	2	Moderately mapped as students can able to analyze the fundamentals of sequential circuit in HDL for writing the programs to build basic application.
18CS33.5	PO1	2	Moderately mapped as students need the knowledge of Counters & Registers to apply in digital computers.
	PO2	2	Moderately mapped as students able to analyze a given problem statement for Counters & Registers using Flip flops.
	PO3	2	Moderately mapped as students able to design a given counter, register using Flipflops.
	PO12	2	Moderately mapped as students can able to analyze the concepts learnt of Counters & Registers in continuing professional development and new developments.
	PSO3	2	Moderately mapped as students can able to analyze the fundamentals of sequential circuit for writing the programs to build basic application.

**Prepared by**

**HoD**

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