SREE VIDYANIKETHAN ENGINEERING COLLEGE

(Autonomous)

Sree Sainath Nagar, A. Rangampet-517 102

Department of Computer Science & Systems Engineering

Lesson Plan cum Dairy 2015-16

he Subject **:** ELECTRONIC DEVICES & CIRCUITS

he faculty Member **:** Mr. Y. Dileep Kumar & Mrs. P. Ratnakamala

emester **:** II – I **Section:** CSSE A & B

S. No.	Topic	No. of periods required	Date(s) covered	No. of periods used	Book(s) followed	Remarks
Unit-I: DIODE,RECTIFIERS AND REGULATORS						
1.	Introduction to PN Junction Diode and Equation	1			T1	
2.	Volt-Ampere (V-I) Characteristics, Temperature Dependence of V-I Characteristics	1			T1	
3.	Ideal versus Practical Characteristics, Static and Dynamic Resistances	1			T1	
4.	Tutorial-1	1			T1	
5.	Diode Equivalent Circuits, Junction capacitances	1			T1	
6.	Break Down Mechanisms in Semiconductor Diodes	1			T1	
7.	Zener Diode Characteristics	1			T1	
8.	Tutorial-2	1			T1	
9.	PN Junction as a Rectifier, Half Wave Rectifier, Ripple Factor	1			T1	
10.	Full Wave Rectifier, Harmonic Components in a Rectifier Circuit	1			T1	
11.	Inductor Filter, Capacitor Filter	1			T1	
12.	Tutorial-3	1			T1	
13.	L & π Section Filters, comparison of various filter circuits in terms of ripple factors	1			T1	
14.	Use of Zener Diode as a Regulator, Problems on Rectifier Circuits and Voltage Regulator,Formative Test-1	1			T1	
Total of periods required:		**14**	**Total of periods used:**			
Unit-II: BIPOLAR JUNCTION TRANSISTOR AND BIASING						
15.	Transistor Construction, BJT Operation, BJT Symbol, Transistor as an Amplifier	1			T1	
16.	Tutorial-4	1			T1	
17.	Transistor currents and their	1			T1	

	relations					
18.	Input and Output Characteristics of Transistor in CE Configuration	1			T1	
19.	Input and Output Characteristics of Transistor in CB & CC Configuration	1			T1	
20.	Tutorial-5	1			T1	
21.	BJT specifications, Operating Point	1			T1	
22.	DC and AC Load Lines, Importance of Biasing	1			T1	
23.	Fixed Biasing, Emitter Feedback Bias, Collector to Emitter feedback Bias	1			T1	
24.	Tutorial-6	1			T1	
25.	Problems on Biasing Circuits, Voltage Divider Bias	1			T1	
26.	BJT Hybrid Modeling for CB Configurations	1			T1	
27.	BJT Hybrid Modeling for CE & CC Configurations	1			T1	
28.	Tutorial-7	1			T1	
29.	Determination of h-parameters from Transistor Characteristics, Measurement of h-Parameters	1			T1	
30.	Analysis of CE, CB and CC configurations using h-Parameters	1			T1	
31.	Comparison of CB,CE and CC Configurations, Simplified Hybrid Model	1			T1	
32.	Tutorial-8					
		18		**Total of periods used:**		
Unit-III: : FIELD EFFECT TRANSISTOR						
33.	Junction Field Effect Transistor(Construction, Principle of Operation, Symbols)	1			T1	
34.	Pinch-off Voltage, Volt-Ampere Characteristics of JFET	1			T1	
35.	MOSFET Characteristics in Enhancement and Depletion Modes	1			T1	
36.	Tutorial-9	1			T1	
37.	Biasing of FET	1			T1	
38.	Small Signal Model of JFET & MOSFET	1			T1	
39.	Generalized FET Amplifier	1			T1	
40.	Tutorial-10	1			T1	
41.	Common Source and Common Drain Amplifiers using FET	1			T1	
42.	FET as Voltage Variable Resistor	1			T1	

43.	Comparison between BJT and FET, Formative Test-2	1			T1	
44.	Tutorial-11	1			T1	
				Total of periods used:		
Unit-IV: FEEDBACK AMPLIFIERS AND OSCILLATORS						
45.	Feedback Concepts, Types of Feedback Circuits(block diagram representation)	1			T1	
46.	General characteristics of negative feedback amplifier	1			T1	
47.	Effect of Feedback on Amplifier characteristics	1			T1	
48.	Tutorial-12	1			T1	
49.	Barkhausen Criterion, Hartley & Colpitts oscillators	1			T1	
50.	Phase Shift Oscillators	1			T1	
51.	Crystal Oscillator, Formative Test-3	1			T1	
52.	Tutorial-13	1			T1	
Total of periods required:		**08**		**Total of periods used:**		
Unit-V: SPECIAL PURPOSE ELECTRONIC DEVICES						
53.	Principle and Operation of Tunnel Diode	1			T1	
54.	Characteristics of Tunnel Diode	1			T1	
55.	Uni-Junction Transistor (UJT)	1			T1	
56.	Tutorial-14	1			T1	
57.	Varactor Diode	1			T1	
58.	Silicon Control Rectifier(SCR)	1			T1	
59.	Principle of operation of Schottky Barrier Diode	1			T1	
60.	Tutorial-15	1			T1	
Total of periods required:		**08**		**Total of periods used:**		
Grand total of periods required:		**60(N)**		**Grand total of periods used:**		**(M)**

Note: Difference between N and M should be within 5%.

TEXT BOOKS:

T1. J. Millman, Christos C. Halkias and Satyabrata Jit, *Electronic Devices and Circuits,* 3rd Edition,TMH, 2010.

REFERENCE BOOKS:

R1. R.L. Boylestad and Louis Nashelsky, *Electronic Devices and Circuits,* 10th Edition, PHI, 2009.

R2. S. Salivahana, N. Suresh Kumar, *Electronic Devices and Circuits*, 3rd Edition, Mc-Graw Hill, 2008.

R3. David A. Bell, *Electronic Devices and Circuits,* 5th Edition, Oxford University press, 2008.

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Signature of the faculty Members **Signature of the HOD**