Department of Electronics and Communication Engineering

Bhoj Reddy Engineering College for Women, Hyderabad.

Academic year 2015-16 I Semester

Lesson Plan

Name of the faculty member: **Suresh.S** Class: **II B.Tech. ECE-A**

Subject: **Electronic Devices and Circuits (EDC)** Semester: **I**

No. of lectures per week: **4+1(Tutorial)**

Lecture Number	Expected Date	Topic to be covered
UNIT I : P-N junction Diode		
1.	01/07/15	Introduction, Qualitative Theory of p-n junction diode
2.	02/07/15	Qualitative Theory of p-n junction diode (Contd..)
3.	03/07/15	P-N junction as a diode
4.	04/07/15	Diode equation
5.	02/07/15, 04/07/15	Tutorials(--,G3,G2):Basics on electronic fundamentals
6.	08/07/15	V-I characteristics,temperature dependence of V-I characteristics
7.	09/07/15	Ideal vs practical resistance levels(static and dynamic)
8.	10/07/15	Diffusion Capacitance
9.	111/07/15	Transition Capacitance
10.	06/07/15,09/07/15,11/07/15	Tutorials(G1,G3,G2):Problems on diode equation
11.	15/07/15	Problems on diode equation
12.	16/07/15	Diode equivalent circuits
13.	17/07/15	Load line analysis
14.	13/07/15,16/07/15	Tutorials(G1,G3,--):Basic circuits analysis
15.	22/07/15	Breakdown mechanisms in semiconductor diodes
16.	23/07/15	Zener diode characteristics
17.	24/07/15	Special purpose electronic devices,varactor diode,photo diode
18.	25/07/15	SCR Characteristics
19.	20/07/15,23/07/15,25/07/15	Tutorials(G1,G3,G2):Discussion on special diodes
20.	29/07/15	Tunnel diode characteristics
UNIT II : Rectifiers And Filters		
21.	30/07/15	P-N junction as a rectifier
22.	31/07/15	Half wave rectifier, Full wave rectifier (center tapped)
23.	1/08/15	Full wave rectifier (bridge), Problems on rectifier
24.	27/07/15,30/07/15,01/08/15	Tutorials(G1,G3,G2): Problems on rectifiers
25.	05/08/15	Harmonic components in filter
26.	06/08/15	Inductor filter, Capacitor filter and problems
27.	07/08/15	L section filter, ∏ section filter
28.	08/08/15	Comparison of rectifiers, filters and problems
29.	03/08/15,06/08/15,08/08/15	Tutorials(G1,G3,G2):Problems on filters

30.	12/08/15	Voltage regulation using zener diode
UNIT III: Bipolar Junction Transistor (BJT) and UJT		
31.	13/08/15	BJT construction, BJT operation
32.	14/08/15	Currents components of a BJT
33.	13/08/15	Tutorials(--,G3,--): Problems on zener voltage regulator
34.	19/08/15	CB configuration characteristics
35.	20/08/15	CE configuration characteristics
36.	21/08/15	CC configuration characteristics
37.	22/09/15	Problem on CB ,CE,CC
38.	17/08/15,20/08/15,22/08/15	Tutorials(G1,G3,G2):Problems on transistor configurations
39.	02/09/15	BJT specifications ,problems on BJT
40.	03/09/15	BJT hybrid model and h-parameters from transistor characteristics
41.	04/09/15	CB Amplifier analysis using h-parameters
42.	05/09/15	CB input output resistance using h model
43.	31/09/15,03/09/15, 05/09/15	Tutorials(G1,G3,G2):h-parameter analysis
44.	09/09/15	CE Amplifier analysis using h-parameters
45.	10/09/15	CC Amplifier analysis using h-parameters
46.	11/09/15	Comparison of CE,CB,CC amplifier configurations, problems
47.	12/09/15	UJT Characteristics
48.	07/09/15,10/09/15,12/09/15	Tutorials(G1,G3,G2):CE,CB,CC h-parameter problems
UNIT IV: Transistor biasing & stabilization		
49.	16/09/15	Operating point, DC & AC load line analysis
50.	18/09/15	Need for biasing, Biasing types
51.	19/09/15	Fixed Biasing
52.	14/09/15,19/09/15	Tutorials(G1,--, G2):Problems on biasing techniques
53.	23/09/15	emitter Biasing
54.	25/09/15	Collector Biasing
55.	26/09/15	Self Biasing
56.	21/09/15,26/09/15	Tutorials(G1,--,G2):Problems on biasing techniques
57.	30/09/15	Stabilization factors, problems on self bias
58.	01/10/15	Bias compensation,Thermal runaway and heat sink
UNIT V: Field Effect Transistor and FET Amplifier		
59.	03/10/15	JFET construction,principle of operation and symbol
60.	28/09/15,01/10/15, 3/10/15	Tutorials(G1,G3,G2):Circuits analysis
61.	07/10/15	Pinch-off voltage, V-I characteristics
62.	08/10/15	JFET small signal model,MOSFET
63.	09/10/15	MOSFET characteristics enhancement and depletion modes
64.	10/10/15	FET Amplifiers:FET CS amplifier, FET CD amplifier
65.	05/10/15,08/10/15,10/10/15	Tutorials(G1,G3,G2):FET analysis
66.	14/10/15	Generalized FET amplifier (Contd..)

67.	15/10/15	Biasing of FET,FET as a variable resistor.
68.	16/10/15	Comparison of BJT and FET
69.	17/10/15	Comparison of BJT ,FET and MOSFET ,FET comparison
70.	17/10/15	Revision on previous papers (Contd..)
71.	15/10/15, 17/10/15	Tutorials(G1,G3,G2):Discussion on all the FET's

Text Books:

1. Integrated Electronics - Jacob Millman and C Halkias, 1991 Ed., 2008, TMH.
2. Electronic Devices and Circuits, B.P. Singh, Rekha Singh, Pearson, 2013
3. Design of Analog CMOS Integrated Circuits-Behzad Razavi 2008,TMH

Reference Books:

1. Electronic Circuit Analysis - Rashid Cengage Learning, 2013.
2. Electronic Circuit Analysis - K. Lal Kishore, 2004, BSP.
3. Electronic Devices and Circuit Theory - Robert L. Boylestad, Louis, Nashelsky, 9th Ed, 2008, PE.

Name of the Faculty: **Suresh.S** Signature of the faculty

Signature of the Head