

# Bhoj Reddy Engineering College for Women: Hyderabad

Department of Electronics and Communication Engineering

Lesson plan of faculty member for the academic year 2017–18

Class: II B Tech

Branch-Section: ECE-B

Semester: I

Subject: Analog Electronics

Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
<b>UNIT – I: Analysis and Design of Small Signal Low Frequency BJT Amplifiers</b>		
1	Introduction	13 July 2017
2	Review of transistor biasing	14 July 2017
3	Classification of amplifiers	15 July 2017
4	Distortion in amplifiers	20 July 2017
5	Introduction to h-parameter model, Analysis of CE Amplifier	21 July 2017
6	Analysis of CC and CB Amplifiers, CE amplifier analysis with emitter resistance	22 July 2017
7	Tutorial: Problems on Analysis of CE amplifier	18 July 2017
8	low frequency response of BJT Amplifiers	24 July 2017
9	effect of coupling and bypass capacitors	27 July 2017
10	Design of single stage RC coupled amplifier	28 July 2017
11	Different coupling schemes used in amplifiers	29 July 2017
12	Tutorial: Design of single stage RC coupled amplifier	25 July 2017
13	Analysis of Cascaded RC Coupled amplifiers	31 July 2017
14	Cascode amplifier	03 August 2017
15	Darlington pair	04 August 2017
<b>UNIT-II: Transistor at High Frequency</b>		
16	The Hybrid- pi ( $\pi$ ) – Common Emitter transistor model	05 August 2017
17	Tutorial: Problems on cascade amplifier	01 August 2017
18	CE short circuit current gain, current gain with resistive load	07 August 2017
19	Single stage CE amplifier response	10 August 2017
20	Gain-bandwidth product	11 August 2017
<b>UNIT-III: FET Amplifiers</b>		
21	Analysis of JFET Amplifiers, Analysis of CS Amplifier	12 August 2017
22	Tutorial: Problems on cascade amplifier	8 August 2017
23	Analysis CD, CG JFET Amplifiers	17 August 2017
24	Comparison of performance with BJT Amplifiers	18 August 2017
25	Basic Concepts of MOS Amplifiers,	19 August 2017
26	Problems on analysis of JFET amplifiers	21 August 2017
27	MOSFET Characteristics in Enhancement mode	24 August 2017
28	MOSFET Characteristics in Enhancement mode	26 August 2017
29	Tutorial: MOSFET Characteristics in Depletion mode	22 August 2017
30	MOSFET Characteristics in Depletion mode	28 August 2017
31	MOS Small signal model, Common source amplifier with resistive load	31 August 2017
32	Common source amplifier with Diode connected load	01 September 2017
33	Tutorial: Problems on MOSFET Characteristics Common source amplifier with Diode connected load	29 August 2017
34	Common source amplifier with Current source load	04 September 2017
35	Source follower, Common Gate Stage	09 September 2017
36	Tutorial: Problems on MOSFET Characteristics	05 September 2017
37	Cascode Amplifier	11 September 2017
38	Tutorial: Problems on cascode amplifier	14 September 2017
39	Folded Cascode Amplifier – frequency response.	15 September 2017

Lecture Number	Topics to be covered	Date (s)
<b>UNIT-IV: Positive and Negative Feedback in Amplifiers</b>		
40	Classification of amplifiers, Concepts of feedback – Classification of feedback amplifiers	16 September 2017
41	Tutorial: Problems on feedback configurations	12 September 2017
42	General characteristics of negative feedback amplifiers – Effect of Feedback on Amplifier characteristics	18 September 2017
43	Voltage series, Voltage shunt Feedback configurations	21 September 2017
44	Current series and Current Shunt Feedback configurations	22 September 2017
45	Simple problems on feedback configurations	23 September 2017
46	Tutorial: Conditions for Oscillations, RC and LC type Oscillators	19 September 2017
47	Frequency and amplitude stability of oscillators	05 October 2017
48	Generalized analysis of LC oscillators	06 October 2017
49	Hartley oscillator, Colpitts oscillator	07 October 2017
50	Tutorial: Problems on Oscillators	03 October 2017
51	Quartz oscillator	09 October 2017
52	RC phase shift oscillator	12 October 2017
53	Wien-bridge oscillators.	13 October 2017
<b>UNIT-V: Large Signal Amplifiers and Tuned Amplifiers</b>		
54	Class A amplifier, Efficiency of Class A amplifier	14 October 2017
55	Tutorial: Problems on oscillators	10 October 2017
56	Transformer Coupled Amplifier	16 October 2017
57	Push pull class B amplifier	19 October 2017
58	Complementary symmetry class B amplifier	20 October 2017
59	Class AB Power Amplifiers	21 October 2017
60	Tutorial: Problems on Class A amplifiers	17 October 2017
61	Principle of operation of class –C Amplifier	23 October 2017
62	Transistor Power Dissipation	26 October 2017
63	Heat Sinks	27 October 2017
64	Introduction to Tuned Amplifiers	28 October 2017
65	Tutorial: Problems on power amplifiers	24 October 2017
66	Q-Factor	30 October 2017
67	Small Signal Tuned Amplifiers	02 November 2017
68	Frequency response of tuned amplifiers	03 November 2017
69	Discussion on previous question papers	04 November 2017
70	Tutorial: Revision	31 October 2017
71	Revision	06 November 2017
72	Revision	07 November 2017

**TEXT BOOKS:**

1. David A. Bell, "Electronic Devices and Circuits", 5th Edition, Oxford.
2. Salivahanan S, Suresh Kumar N, Vallvaraj A, "Electronic Devices and Circuits", 5<sup>th</sup> Edition, Mc Graw Hill Education.
3. Md Rashid H, "Electronics circuits and applications", Cengage 2014.
4. Jacob Millman, Christos C Halkias, "Integrated Electronics", McGraw Hill Education.
5. Robert L. Boylestead, Louis Nashelsky, "Electronic Devices and Circuits theory", 11<sup>th</sup> Edition, 2009, Pearson.

Name and signature of the faculty: J Stella Mary ----

Name and signature of Head of the Department: N Shribala ----