

# 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: III B Tech

Branch-Section: ECE-A

Semester: I

Subject : Linear Digital Integrated circuits

Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
<b>UNIT – I: OPERATIONAL AMPLIFIER</b>		
1.	Tutorial ( G1 G2,)- Introduction to Integrated Circuits	12,13 July 2017
2.	Introduction to Integrated Circuits , Ideal and Practical Op-Amp	14 July 2017
3.	Op-Amp Characteristics, Features of 741 op-amp	15 July 2017
4.	DC Characteristics	18 July 2017
5.	Tutorial ( G1 ,G2)- Op-Amp Characteristics	19, 20 July 2017
6.	AC Characteristics	21 July 2017
7.	Modes of operation : Inverting , Non-Inverting	22 July 2017
8.	Differential	24 July 2017
9.	Instrumentation amplifier	25 July 2017
10.	Tutorial (G3, G1, G2)- Problems on Modes of operation	24, 26, 27 July 2017
11.	AC amplifier	28 July 2017
12.	Differentiators & Integrators	29 July 2017
13.	Comparators	31 July 2017
14.	Schmitt trigger and problems	1 August 2017
15.	Tutorial (G3, G1,G2)- Problems on Schmitt trigger	31 July, 2, 3 August 2017
16.	Introduction to Voltage Regulators, Features of 723	4 August 2017
17.	Three terminal voltage regulators	5 August 2017
<b>UNIT – II: OP-AMP, IC-555 &amp; IC 565 APPLICATIONS</b>		
18.	Introduction to Active Filters, Characteristics of Band pass filter, Band Reject and All Pass Filters	7 August 2017
19.	Analysis of 1 <sup>st</sup> order LPF and HPF Butterworth filters	8 August 2017
20.	Tutorial (G3, G1, G2)- Filter Design	7, 9,10 August 2017
21.	Waveform Generators: Triangular waveform generator	11 August 2017
22.	Sawtooth waveform generator , Square wave generator,	12 August 2017
23.	Tutorial ( G1 ,G2)-Problems on Waveform Generators	16,17 August 2017
24.	Introduction to IC 555 timer, Functional diagram	18 August 2017
25.	Monostable Operation & Applications	19 August 2017
26.	Astable Operation & Applications	21 August 2017
27.	IC 565 PLL - Introduction, Block schematic, Analog Phase detector	22 August 2017
28.	Tutorial (G3, G1, G2)- Monostable & Astable Operation & Applications	21, 23, 24 August 2017
29.	Principles and Description of individual blocks of 565 (VCO)	26 August 2017
30.	Digital Phase detector, PLL pin diagram	28 August 2017
31.	PLL applications	29 August 2017
32.	Tutorial (G3, G1, G2) - Principles and Description of individual blocks of 565 (VCO)	28, 30, 31 August 2017
<b>UNIT – III: DATA CONVERTERS</b>		
33.	Introduction, Basic DAC Techniques	1 September 2017
34.	Types of DACs: Weighted Resistor DAC, R-2R ladder DAC	4 September 2017
35.	Inverted R-2R DAC	5 September 2017
36.	Tutorial (G3)- DAC Techniques	4 September 2017
37.	Types of ADCs: Parallel Comparator Type ADC	9 September 2017
38.	Counter Type ADC	11 September 2017
39.	Successive approximation ADC	12 September 2017
40.	Tutorial (G3, G1, G2)- Problems on DACs	11,13,14 September 2017

41.	Dual slope ADC	15 September 2017
42.	DAC Specifications	16 September 2017
43.	ADC Specifications	18 September 2017
<b>UNIT-IV: DIGITAL INTEGRATED CIRCUITS</b>		
44.	Classification of Integrated Circuits	19 September 2017
45.	Tutorial (G3, G2)- Problems	18, 21 September 2017
46.	Comparison of various logic families	22 September 2017
47.	CMOS Transmission gate	23 September 2017
48.	IC Interfacing: TTL driving CMOS and CMOS driving TTL	3 October 2017
49.	Tutorial (G1, G2)- Logic Families	4, 5 October 2017
50.	Use of TTL-74XX & CMOS 40XX series	6 October 2017
51.	Code converter TTL ICs and their applications	7 October 2017
52.	Decoder TTL ICs and their applications	9 October 2017
53.	Demultiplexer TTL ICs and their applications	10 October 2017
54.	Tutorial (G3, G1, G2)-Problems	9,11,12October 2017
55.	LED & LCD Decoders with Drivers	13 October 2017
56.	Priority generators/ checkers	14 October 2017
57.	Parallel binary adder /Subtractor circuits using 2's Complement system	16 October 2017
58.	Magnitude comparator Circuits	17 October 2017
59.	Tutorial (G3,G2)-Problems on Priority generators/ checkers	16,19 October 2017
<b>UNIT-V: SEQUENTIAL LOGIC IC's AND MEMORIES</b>		
60.	All types of Flip-flops	20 October 2017
61.	All types of Flip-flops	21 October 2017
62.	Synchronous counters	23 October 2017
63.	Problems on Synchronous Counter design	24 October 2017
64.	Tutorial (G3, G1, G2)–Problems on Counters	23, 25, 26 October 2017
65.	Decade counter	27 October 2017
66.	Shift registers	28 October 2017
67.	Memories: ROM Architecture	30 October 2017
68.	Types of ROMs and Applications	31 October 2017
69.	Tutorial (G3, G1, G2) – Problems on ROMs	1 November 2017
70.	RAM Architecture	3 November 2017
71.	Static RAMs	6 November 2017
72.	Dynamic RAMs	7 November 2017

**Text books:**

1. Op Amps and Linear ICs - Ramakanth A Gayakwad, PHI, 2003.
2. Linear Integrated Circuits – D.Roy Chowdhury, New Age International (p) Ltd, 2/e, 2003.
3. Digital Fundamentals – Floyd and Jain, Pearson Education, 8<sup>th</sup> Edition,2005.

Name and signature of the faculty: K. Srinidhi Reddy ----

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