

**Department of Electronics and Communication Engineering**

**Bhoj Reddy Engineering College for Women: Hyderabad**

Lesson Plan of faculty member for the academic year 2015 – 2016

Name of the faculty member and Department: RVNR SUNEEL KRISHNA, ECE

Subject: Embedded Systems

Class: IV B.Tech.

Branch & Section: ECE-B

Semester: I

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

No	DATE	NAME OF THE TOPIC
<b>UNIT – I EMBEDDED COMPUTING</b>		
1.	30/06/15	Introduction to Systems, Complex systems
2.	01/07/15	Introduction to Microprocessors
3.	02/07/15	The Embedded System Design Process
4.	03/07/15	Formalisms for System Design
5.	29/06/15,01/07/15 30/06/15	Tutorial(conversion of numbers) (G1,G3,G2)
6.	7/07/15	Design Examples
<b>UNIT – II 8051 ARCHITECTURE</b>		
7.	8/07/15	Introduction to 8051 Architecture
8.	9/07/15	About 8051 Micro controller Hardware
9.	10/07/15	8051 Architecture-Pin diagram,Input/Output Ports
10.	6/07/15,8/07/15, 7/07/15	Tutorial(conversion of numbers) (G1,G3,G2)
11.	14/07/15	External Memory Organization
12.	15/07/15	Counters and Timers
13.	16/07/15	Introduction to Serial communication
14.	17/07/15	Introduction to Interrupts
15.	13/07/15,15/07/15, 14/07/15	Tutorial(TCON,TMOD,SCON,PCON format) (G1,G3,G2)
<b>UNIT – III ASSEMBLY LANGUAGE PROGRAMMING</b>		
16.	21/07/15	Introduction to The Assembly Language
17.	22/07/15	Assembly Language Programming Process
18.	23/07/15	Programming the 8051
19.	24/07/15	Data Transfer Instructions
20.	20/07/15,22/07/15, 21/07/15	Tutorial(Problems on baud rate) (G1,G3,G2)
21.	28/07/15	Arithmetic Instructions
22.	29/07/15	Arithmetic Instructions
23.	30/07/15	Decimal Arithmetic
24.	31/07/15	Jump Instructions
25.	27/07/15,29/07/15, 28/07/15	Tutorial(Programs on timers) (G1,G3,G2)
26.	04/08/15	Jump Instructions
27.	05/08/15	Call Instructions
28.	6/08/15	Call Instructions
29.	7/08/15	Logical Instructions

30.	3/08/15,05/08/15, 04/08/15	Tutorial(Programs on serial port and stack pointer operation)(G1,G3,G2)
<b>UNIT – IV PSOC ARCHITECTURE AND PROGRAMMING</b>		
31.	11/08/15	Introduction to PSoC
32.	12/08/15	PSoC as a Single-chip Solution for ES Design
33.	13/08/15	PSoC Architecture
34.	14/08/15	Analog Block in PSoC
35.	...,12/08/15,11/08/15	Tutorial(Programs on serial port and stack pointer operation) (G3,G2)
36.	18/08/15	Digital Block in PSoC
37.	19/08/15	Controller Block in PSoC
38.	20/08/15	Hardware Programming through PsoC Creator
39.	21/08/15	I/O Pin Configurability
40.	17/08/15,19/08/15, 18/08/15	Tutorial(Programs on serial port and stack pointer operation) (G1,G3,G2)
<b>UNIT – V APPLICATIONS</b>		
41.	25/08/15	Intoduction to PSOC creator
42.	26/08/15	Blinking an LED
43.	27/08/15	Cap Sense
44.	28/08/15	Digital Logic
45.	24/08/15,26/08/15, 25/08/15	Tutorial(Design examples)(G1,G3,G2)
46.	1/09/15	Precision Analog
47.	2/09/15	Serial Data Communications
<b>UNIT – VI INTRODUCTION TO RTOS</b>		
48.	3/09/15	Introduction to Real-Time Operating Systems
49.	4/09/15	Tasks and Data
50.	31/08/15,2/09/15, 1/09/15	Tutorial(RTOS concepts)(G1,G3,G2)
51.	8/09/15	Semaphores
52.	9/09/15	Shared Data Problems
53.	10/03/15	Mail boxes and Pipes
54.	11/03/15	Timer Functions
55.	7/09/15,9/09/15, 8/09/15	Tutorial(resource synchronization)(G1,G3,G2)
56.	15/09/15	Memory Management in RTOS, Interrupt Routines in an RTOS Environment
57.	16/09/15	When Semaphores and Queues will be used
58.	14/09/15, 16/09/15,15/09/15,	Tutorial (RTOS environment)(G1,G3,G2)
<b>UNIT – VII BASIC DESIGN USING A RTOS</b>		
59.	18/09/15	An example RTOS like uC-OS (Open Source)
60.	22/09/15	Hard Real-Time Scheduling Considerations, Saving Memory and Power
61.	23/03/15	Embedded Software Development Tools
62.	25/09/15	Host and Target machines
63.	21/09/15, 23/09/15, 22/09/15	Tutorial (RTOS example)(G1,G3,G2)
64.	29/09/15	Linker/Locators for Embedded Software
65.	30/09/15	Getting Embedded Software into the Target System
66.	01/10/15	Different Debugging Techniques

67.	28/09/15,30/09/15, 29/09/15	Tutorial (RTOS example)(G1,G3,G2)
68.	6/10/15	Testing on Host Machine, Using Laboratory Tools, An Example System
<b>UNIT – VIII INTRODUCTION TO ADVANCED ARCHITECTURES</b>		
69.	7/10/15	Introduction to Advanced Architectures, Processor Architectures: ARM and SHARC
70.	8/10/15	Processor and memory organization
71.	9/10/15	Instruction level parallelism
72.	5/10/15,7/10/15,6/10/15	Tutorial (Linker/Locators)(G1,G3,G2)
73.	13/10/15	Networked Embedded Systems,
74.	14/10/15	Bus protocols
75.	15/10/15	I <sup>2</sup> C bus
76.	16/10/15	CAN bus
77.	....,14/10/15,13/10/15	Tutorial(Design example:Elevator-Controller) (G3,G2)

**TEXT BOOK:**

- 1 .Computers and Components, Wayne Wolf, Elsevier.
2. The 8051 Microcontroller, Third Edition, Kenneth J. Ayala, Thomson.
3. An Embedded Software Primer, David E. Simon, Pearson Education.

Name :

Signature of the faculty with date:

HoD Signature: