

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: M.Krishna Chaithanya, ECE

Subject: Embedded Systems

Class: IV B.Tech.

Branch & Section: ECE-C

Semester: I

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

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

UNIT – IV PSoC ARCHITECTURE AND PROGRAMMING		
29.	08/08/15	PSoC as a Single-chip Solution for ES Design
30.	11/08/15	PSoC Architecture
31.	14/08/15	Analog Block in PSoC
32.	11/08/15,....,13/08/15	Tutorial(Programs on serial port and stack pointer operation) (G2,....,G3)
33.	17/08/15	Digital Block in PSoC
34.	18/08/15	Controller Block in PSoC
35.	21/08/15	Hardware Programming through PsoC Creator
36.	22/08/15	I/O Pin Configurability
37.	17/08/15,18/08/15, 20/08/15	Tutorial(Programs on serial port and stack pointer operation) (G2,G1,G3)
UNIT – V APPLICATIONS		
38.	28/08/15	Blinking an LED
39.	29/08/15	Cap Sense
40.	27/08/15,.....	Tutorial(PWM)(G2)
41.	31/08/15	Digital Logic
42.	1/09/15	Precision Analog
43.	4/09/15	Serial Data Communications
UNIT – VI INTRODUCTION TO RTOS		
44.	5/09/15	Introduction to Real-Time Operating Systems
45.	31/08/15,1/09/15, 3/09/15	Tutorial(RTOS concepts)(G2,G1,G3).
46.	7/09/15	Tasks and Data
47.	8/09/15	Semaphores and Different Shared Data Problems
48.	11/09/15	Mail boxes and Pipes
49.	12/03/15	Timer Functions
50.	7/09/15,8/09/15, 10/09/15	Tutorial(resource synchronization)(G2,G1,G3)
51.	14/09/15	Memory Management in RTOS, Interrupt Routines in an RTOS Environment
52.	15/09/15	When Semaphores and Queues will be used
UNIT – VII BASIC DESIGN USING A RTOS		
53.	18/09/15	An example RTOS like uC-OS (Open Source)
54.	19/09/15	Hard Real-Time Scheduling Considerations, Saving Memory and Power
55.	14/09/15,15/09/15,....	Tutorial (Embedded Software Development Tools) (G2,G1)
56.	21/09/15	Host and Target machines
57.	22/09/15	Linker/Locators for Embedded Software
58.	25/09/15	Getting Embedded Software into the Target System
59.	26/09/15	Different Debugging Techniques
60.	21/09/15, 22/09/15,....	Tutorial (RTOS example) (G2,G1)
61.	28/09/15	Testing on Host Machine, Using Laboratory Tools, An Example System
UNIT – VIII INTRODUCTION TO ADVANCED ARCHITECTURES		
62.	29/09/15	Introduction to Advanced Architectures
63.	3/10/15	Processor Architectures: ARM and SHARC

64.	28/09/15,29/09/15,1/10/15	Tutorial (Linker/Locators)(G2,G1,G3)
65.	5/10/15	Processor and memory organization
66.	6/10/15	Instruction level parallelism
67.	9/10/15	Networked Embedded Systems,
68.	10/10/15	Bus protocols
69.	5/10/15, 6/10/15, 8/10/15	Tutorial (Internet enabled systems) (G2,G1,G3)
70.	13/10/15	I ² C bus
71.	16/10/15	CAN bus
72.	17/10/15	Previous years question paper discussion
73.	13/10/15,.....,15/10/15,	Tutorial(Design example:Elevator-Controller) (G2,G3)

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.
- 4.The PsoC Controller,Robert Ashby,e-Book

Name :M.krishna Chaithanya

Signature of the faculty with date:

HoD Signature: