

## LESSON PLAN

**Subject Code & Name:** Embedded and Real time Systems

**Branch:** VLSI      **Class / Semester:** IM.Tech-SEM 1

**Academic Year:**2017-18

**Faculty:** J.Swathi

Period	Date (Tentative)	Topic	Unit No.	Teaching Methodology	Remarks	Corrective action upon review
		<b>INTRODUCTION</b>	<b>I</b>			
1	06/10/17	Embedded systems over view		PPT		
2	06/10/17	Design challenges		PPT		
3	09/10/17	Processor technology		PPT		
4	09/10/17	Design technology		PPT		
5	13/10/17	Trade-offs		PPT		
6	13/10/17	Single purpose processors RT-level combinational logic		PPT		
7	16/10/17	sequential logic (RT level)		PPT		
8	16/10/17	Custom purpose processor design (RT level)		PPT		
9	20/10/17	Optimizing custom single purpose processors.		PPT		
		<b>GENERAL PURPOSE PROCESSORS</b>	<b>II</b>			
10	20/10/17	Introduction				
11	23/10/17	Basic architecture		PPT		
12	23/10/17	Operations		PPT		
13	27/10/17	Programmer's view		PPT		
14	27/10/17	Development environment		PPT		
15	30/10/17	Application specific Instruction -Set processors (ASIPS)-Micro controllers		PPT		
16	30/10/17	ASIPS-Digital signal processors		PPT		
		<b>STATE MACHINE AND CONCURRENT PROCESS MODELS</b>	<b>III</b>			
17	02/11/17	Introduction, models Vs Languages		PPT		
18	02/11/17	Finite state machines with data path model(FSMD)		PPT		
19	06/11/17	Using state machines,		PPT		
	06/11/17	Program state machine model(PSM)		PPT		
20	10/11/17	concurrent process model				
21	10/11/17	Concurrent processes, communication among processes		PPT		
22	13/11/17	Synchronization among processes		PPT		
23	13/11/17	Implementation, data flow model		PPT		
24	17/11/17	Real-time systems.		PPT		

		<b>Communication processes:</b>	<b>IV</b>			
25	17/11/17	Need for communication interfaces		BB		
26	20/11/17	Rs232/UART		BB		
27	20/11/17	Rs422/RS485		BB		
28	24/11/17	USB		BB		
29	24/11/17	Infrared		BB		
30	04/12/17	IEEE 1394 Fire wire		BB		
31	04/12/17	Ethernet		BB		
32	08/12/17	IEEE 802.11, Blue tooth		BB		
		<b>EMBEDDED/RTOS CONCEPTS-I &amp; II</b>	<b>V</b>			
33	08/12/17	Introduction		BB		
34	11/12/17	Architecture of the Kernel		BB		
35	11/12/17	Tasks and task scheduler		BB		
36	15/12/17	Interrupt service routines		BB		
37	15/12/17	Semaphore		BB		
38	18/12/17	Mutex		BB		
39	18/12/17	Embedded/rtos concepts		BB		
40	22/12/17	Mailboxes		BB		
41	22/12/17	Message Queues		BB		
42	29/12/17	Event Registers		BB		
43	29/12/17	Pipes-Signals		BB		
		<b>EMBEDDED/RTOS CONCEPTS -III:</b>	<b>VI</b>			
44	05/01/18	Introduction				
45	05/01/18	Timers-Memory Management		PPT		
46	08/01/18	Priority inversion problem		PPT		
47	08/01/18	embedded operating systems		PPT		
48	19/01/18	Embedded Linux-Real-time		PPT		
49	19/01/18	operating systems-RT Linux		PPT		
50	22/01/18	Handheld operating systems Windows CE.		PPT		

**CR: CLASS ROOM**

**PPT: POWER POINT PRESENTATION**

**LCD**

**TEXT BOOKS:**

1. Embedded System Design-A Unified Hardware/Software Introduction- Frank Vahid, Tony D. Givargis, John Wiley & Sons, Inc.2002.
2. Embedded/Real Time Systems- KVKK prased, Dreamtech press-2005.
3. Introduction to Embedded Systems - Raj Kamal, TMS-2002.

**REFERENCE BOOKS:**

1. Embedded Microcomputer Systems-Jonathan W.Valvano,Books/Cole,ThomsonLeaarning.
2. An Embedded Software Primer- David E.Simon, pearson Ed.2000

**FACULTY**

**HEAD OF THE DEPARTMENT**