

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: IV B Tech

Branch-Section: ECE-B

Semester: I

Subject: Embedded Systems Design

Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
UNIT – I: Introduction to Embedded Systems		
1	Definition of Embedded System	12 July 2017
2	General Computing System	14 July 2017
3	Embedded System Vs General Computing System	15 July 2017
4	Tutorial (G3) - Examples related to Embedded Devices	14 July 2017
5	History of Embedded System	19 July 2017
6	Classification	21 July 2017
7	Classification continued...	22 July 2017
8	Tutorial (G1,G3) - Examples related to Applications	18, 21 July 2017
9	Major Application Areas	24 July 2017
10	Purpose of Embedded System	26 July 2017
11	Characteristics of Embedded System	28 July 2017
12	Quality Attributes of Embedded System	29 July 2017
13	Tutorial (G2, G1, G3) - Seminar on Generations of Embedded	24, 25, 28 July 2017
UNIT-II: Typical Embedded System		
14	Core of Embedded System	31 July 2017
15	General Purpose Processors	2 August 2017
16	Domain specific Processors	4 August 2017
17	Commercial Off-The-Shelf Components(COTS)	5 August 2017
18	Tutorial (G2, G1, G3) - ASICs and PLDs	31 July, 1, 4 August 2017
19	Memory according to type of Interface	7 August 2017
20	Memory Shadowing selection for Embedded Systems	9 August 2017
21	Sensors and Actuators	11 August 2017
22	Onboard Communication Interface	12 August 2017
23	Tutorial (G2, G1, G3) - ROM and RAM	7, 8, 11 August 2017
24	External Communication Interface	16 August 2017
UNIT-III: Embedded Firmware		
25	Reset Circuit and Oscillator Unit	18 August 2017
26	Brown-out Protection Circuit	19 August 2017
27	Tutorial (G3) - Seminar on Embedded Circuits	18 August 2017
28	Real Time Clock	21 August 2017
29	Real Time Clock continued....	23 August 2017
30	Watchdog Timer	26 August 2017
31	Tutorial (G2, G1) - Seminar on Embedded Timers	21, 22 August 2017
32	Embedded Firmware Design Approaches	28 August 2017
33	Embedded Firmware Design Approaches continued....	30 August 2017
34	Embedded Firmware Development Languages	1 September 2017
35	Tutorial (G2, G1, G3) - Seminar on Embedded Firmware	28, 30 August, 1 September 2017
UNIT-IV: RTOS Based Embedded System Design		
36	Operating System Basics	4 September 2017
37	Types of Operating System	9 September 2017
38	Tutorial (G2, G1) - Seminar on Operating Systems	4, 5 September 2017
39	Task	11 September 2017
40	Process	13 September 2017
41	Threads	15 September 2017
42	Multiprocessing and Multitasking	16 September 2017
43	Tutorial (G2, G1, G3) - Examples related to Threads	11, 12, 15 September 2017

44	Types of Multitasking	18 September 2017
45	Task Scheduling	22 September 2017
46	Task Scheduling continued....	23 September 2017
47	Tutorial (G2, G1, G3) - Examples related to Task Scheduling	18,19, 22 September 2017
UNIT-V: Task Communication		
48	Shared Memory	4 October 2017
49	Examples related to Shared Memory	6 October 2017
50	Message Passing	7 October 2017
51	Tutorial (G1, G3) - Examples related to Communication	3, 6 October 2017
52	Examples related to Message Passing	9 October 2017
53	Remote Procedure call and Socket	11 October 2017
54	Examples related to Call	13 October 2017
55	Examples related to Socket	14 October 2017
56	Tutorial (G2, G1, G3) - Examples related to Communication	9, 10, 13 October 2017
57	Task Synchronization	16 October 2017
58	Communication issues	20 October 2017
59	Examples related to Communication issues	21 October 2017
60	Tutorial (G2, G1, G3) - Examples related to Synchronization	16, 17, 20 October 2017
61	Synchronization issues	23 October 2017
62	Examples related to Synchronization issues	25 October 2017
63	Task Synchronization Techniques	27 October 2017
64	Task Synchronization Techniques continued....	28 October 2017
65	Tutorial (G2, G1, G3) - Examples related to Synchronization	23, 24, 27 October 2017
66	Examples related to Task Synchronization Techniques	30 October 2017
67	Device Drivers	1 November 2017
68	How to Choose an RTOS	3 November 2017
69	Tutorial (G2, G1, G3) - Previous question papers	30 October, 1, 3 November 2017
70	Discussion of previous question papers	6 November 2017
71	Tutorial (G2, G1) - Revision	6, 7 November 2017

Text books:

1. Shibu K V, "Introduction to Embedded Systems", Mc Graw Hill.

Reference books:

1. Raj Kamal, "Embedded Systems", TMH.
2. Frank Vahid and Tony Givargis, "Embedded Systems Design", John Wiley.
3. Lyla, "Embedded Systems", Pearson, 2013.
4. David E Simon, "An Embedded Software Primer", Pearson Education.

Name and signature of the faculty: K Amtul Salam ----

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