#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Electronics & Communication

SEMESTER :VII

NAME OF THE FACULTY : Sharmila K.P.

BRANCH : ECE
SUBJECT : CCN
SUBJECT CODE : 10EC71
NO OF HRS/WK : 5

DATE OF COMMENCEMENT : 28.07.2016
DATE OF CLOSING : 09.11.2016
CLASS STRENGTH :
TOTAL HRS : 60

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	1/1	28-07	**Unit 1:** Layered tasks, OSI Model	Board, chalk, duster, Projector		
2	2/1	29-07	TCP/IP suite,	,,		
3	3/1	01-08	Addressing	,,		
4	4/1	02-08	Telephone and cable networks for data transmission	,,		
5	5/1	03-08	Telephone network	,,		
6	6/1	04-08	Dial up modem	,,		
7	7/1	05-08	DSL	,,		
8	8/1	08-08	Cable t.v for data transmission	,,		
10	1/2	09-08	**Unit 2:** Data link control	Board, chalk, duster, Projector		

11	2/2	10-08	Framing	,,		
12	3/2	11-08	Flow and error control	,,		
13	4/2	12-08	Protocols	,,		
14	5/2	17-08	Noiseless channels	,,	Assignment- 2	
15	6/2	18-08	Noisy channel	,,		
16	7/2	19-08	HDLC	,,		
17	8/2	20-08	**Unit 3:** Multiple access	,,		
18	9/2	22-08	CSMA, CSMA/CD	,,		
19	1/3	24-08	ALOHA	,,		
20	2/3	25-08	Random access	,,		
21	3/3	26-08	Controlled access	,,		
22	4/3	27-08	Channelization	,,	Assignment –III	
23	5/3	29-08	TDMA, FDMA, CDMA	Board, chalk, duster, Projector		
24	6/3	31-08	**Unit 4:** Wired LAN	,,		
25	7/3	01-09	Ether net	,,		
26	1/4	02-09	IEEE standards	,,		
27	2/4	09-09	Standard Ethernet	,,		
28	3/4	10-09	Changes in the standards	,,	Assignment –IV	

29	4/4	14-09	Fast Ethernet	,,		
30	5/4	15-09	Giga bit ethernet	,,		
31	6/4	16-09	Wireless LAN	,,		
32	7/4	17-09	IEEE 802.11	,,		
33	8/4	19-09	**Unit 5:** Connecting LAN	,,		
34	1/5	21-09	HUB, Repeater	,,	Assignment -V	
35	2/5	22-09	Bridges	Board, chalk, duster, Projector		
36	3/5	23-09	Routers	,,		
37	4/5	24-09	Gateways	,,		
38	5/5	26-09	Backbone networks	,,		
39	6/5	28-09	Virtual LAN	,,		
40	7/5	29-09	Membership and configuration	,,		
41	8/5	03-10	**Unit 6:** Network layer	,,		
42	9/5	04-10	Logical addressing			
43	10/5	05-10	IPV4	,,		
44	11/5	07-10	IPV6	,,		
45	1/6	08-10	Comparison	,,		
46	2/6	13-10	Transition from IPV4 to IPV6	,,		
47	3/6	14-10	Tunneling, dual stack	,,		
48	4/6	17-10	**Unit 7:** Delivery	,,		

49	5/6	18-10	Forwarding	Board, chalk, duster, Projector		
50	6/6	19-10	Unicast routing protocols	,,		
51	1/7	20-10	Distance vector routing protocol	,,		
52	2/7	21-10	Link state routing protocol	,,		
53	3/7	22-10	Multicast routing protocol	,,		
54	4/7	27-10	Comparison	,,		
55	5/7	02-11	Numerical problems based on routing			
56	1/8	03-11	**Unit 8:** Transport layer			
57	2/8	04-11	Process to process delivery			
58	3/8	05-11	UDP			
59	4/8	07-11	TCP			
60	5/8	09-11	DNS, Resolution			

Signature of faculty Signature of HOD Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER : VII
BRANCH : TCE
SUBJECT : OFC
SUBJECT CODE : 10TE72
NO OF HRS/WK : 4

NAME OF THE FACULTY : S.Sujatha
DATE OF COMMENCEMENT : 1.08.2016
DATE OF CLOSING : 22.11.2016
CLASS STRENGTH : 103
TOTAL HRS : 60

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	**1/1**	1.08.16	Introduction, historical development, General system, Advantages, Disadvantages,	Board, chalk, duster		
2	**2/1**	2.08.16	Application of Optical fiber communication	,,		
3	**3/1**	4.08.16	Optical fiber waveguides: Ray theory, Cylindrical fiber,	,,		
4	**4/1**	6.08.16	Single mode fiber	,,		
5	**5/1**	8.08.16	Cut-off wavelength, mode filed diameter	,,		
6	**6/1**	9.08.16	Optical fibers: Fiber materials	,,		
7	**7/1**	11.08.16	Photonic crystal, Fiber optic cables specialty fiber	,,	Assignment- I	
8	**1/2**	13.08.16	Introduction, Attenuation, Absorption	Board, chalk, duster		
9	**2/2**	15.08.16	Scattering losses	,,		
10	**3/2**	16.08.16	Bending losses	,,		
11	**4/2**	17.08.16	Dispersion (Intermodal, Intra modal)	,,		

12	**1/3**	18.08.16	Introduction, LEDs, LASER Diodes	,,		
13	**2/3**	19.08.16	Photo Detectors, ,	,,	Assignment -II	
14	**3/3**	20.08.16	Photo Detector noise	,,		
15	**4/3**	22.08.16	Response time,			
16	**5/3**	23.08.16	Double Hetero junction structure			
17	**6/3**	24.08.16	Photo diodes			
18	**7/3**	25.08.16	comparison of photo detectors	,,		
19	**6/3**	26.08.16	Introduction, Fiber alignment	,,	Assignment –III	
20	**1/4**	27.08.16	joint loss	,,		
21	**2/4**	29.08.16	Single mode fiber joints	,,		
22	**3/4**	30.08.16	fiber splices	,,		
23	**4/4**	31.08.16	Fiber connectors			
24	**5/4**	9.09.16	Fiber couplers	Board, chalk, duster		
25	**1/5**	10.09.16	Introduction, Optical Receiver operation	,,		
26	**2/5**	12.09.16	Receiver sensitivity, Quantum limit	,,		
27	**3/5**	14.09.16	Eye diagrams	,,	Assignment –IV	
28	**4/5**	15.09.16	Coherent Detection,	,,		
29	**5/5**	17.09.16	Burst mode Receiver operation	,,		
30	**6/5**	19.09.16	Analog Receiver.	,,		
31	**1/6**	21.09.16	Analog links: Introduction	,,		
32	**2/6**		Overview of Analog links, CNR,	,,		

33	**3/6**	22.09.16	Multichannel transmission techniques	Board, chalk, duster	Assignment -V	
34	**4/6**	26.09.16	RF over Fiber, Key link Parameters	,,		
35	**5/6**	28.09.16	Radio over fiber links, Microwave photonics.	,,		
36	**6/6**	29.09.16	Digital links: Introduction, point to point links	,,		
37	**7/6**	2.10.16	system considerations, link power budget, resistive budget,	,,		
38	**8/6**	5.10.16	shortwave length band, Transmission distance for single mode fibers,	,,		
39	**9/6**	12.10.16	Power penalties, modal noise, chirping.	,,		
40	**1/7**	16.10.16	WDM concepts, Overview of WDM operation	,,		
41	**2/7**	18.10.16	WDM Principles, WDM standards,	,,		
42	**3/7**	19.10.16	Mach- Zehender Interferometer, Multiplexer	,,		
43	**4/7**	21.10.16	Isolators and Circulators, Direct thin film filters,	,,		
44	**5/7**	23.10.16	Active optical components, MEMs Technology, Variable optical attenuators	,,		
45	**6/7**	25.10.16	Tunable optical fibers, Dynamic gain equalizers,	,,		
46	**7/7**	26.10.16	Optical drop multiplexers, Polarization controllers,	,,		
47	**8/7**	28.10.16	Chromatic dispersion compensators, Tunable light sources.	,,		
48	**1/8**	30.10.16	Optical Amplifiers	,,		
49	**2/8**	2.11.16	Basic applications and types,	Board, chalk, duster		
50	**3/8**	2.11.16	Semiconductor optical amplifiers	,,		
51	**4/8**	7.11.16	Erbium Doped Fiber Amplifiers	,,		

52	**5/8**	9.11.16	Optical Networks: Introduction	,,		
53	**6/9**	10.11.16	SONET/SDH, Optical Interfaces	,,		

Signature of faculty Signature of HOD Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

DEPARTMENT OF TELECOMMUNICATION

SEMESTER	: VII	NAME OF THE FACULTY	: RAHUL NYAMANGOUDAR
BRANCH	: TCE	DATE OF COMMENCEMENT	: 01 /08/2016
SUBJECT	: Wireless Communication	DATE OF CLOSING	: 09/11 /2016
SUB CODE	: 10TE73	CLASS STRENGTH	: 105
NO. OF HRS/WK	: 4	TOTAL HRS	: 57

Session No.	Chapter no (No. of hrs. planed for chapter)	Date	Topics planned for the session	Teaching Aids	Assignments / Tests planned for the chapter	Topics covered As per plan
1	1/7	1/8/16	UNIT - 1 Introduction to wireless telecommunication systems & Networks	Board, chalk, duster		
2	2/7	3/8/16	History and Evolution of wireless cellular networks 1g	,,		
3	3/7	4/8/16	Evolution of wireless cellular networks 1g	,,		
4	4/7	5/8/16	AMPS (detail)	,,		
5	5/7	6/8/16	Overview of 2Gsystem	Projector , Board, chalk, duster		

6	6/7	8/8/16	Overview of 3Gsystem	Board, chalk, duster		
7	7/7	10/8/16	Overview of 4G system	Projector , Board, chalk, duster		
8	1/8	11/8/16	UNIT - 2 Common Cellular System components	,,		
9	2/8	12/8/16	Block diagram of SD & subsystem	,,		
10	3/8	16/8/16	Base switching center and working of RBS	,,		
11	4/8	17/8/16	Mobile switching Center, subsystem and working,	,,		
12	5/8	19/8/16	Databases of cellular system, HLR,VLR,EIR,ILR,AUC	,,		
13	6/8	20/8/16	Hardware and software, views of cellular networks.	Projector , Board, chalk, duster		
14	7/8	22/8/16	Cellular component identification.	,,		
15	8/8	23/8/16	Call Establishment	Board, chalk, duster		
16	1/7	24/8/16	UNIT - 3 Wireless network architecture and operation, Cellular concept	,,		
17	2/7	26/8/16	Cell fundamentals & Examples	,,		
18	3/7	27/8/16	Capacity expansion techniques	,,		
19	4/7	29/8/16	Cellular backbone networks	,,		
20	5/7	30/8/16	Mobility management	Projector , Board, chalk, duster		
21	6/7	31/8/16	Radio resources & Power management	,,		
22	7/7	2/9/16	Wireless network security	,,		
23	1/8	9/9/16	UNIT - 4 GSM and TDMA techniques	Board, chalk, duster		

24	2/8	10/9/16	GSM system overview	,,		
25	3/8	13/9/16	GSM Network and system Architectures	,,		
26	4/8	14/9/16	GSM Network and system Architecture	,,		
27	5/8	16/9/16	GSM signaling Model	,,		
28	6/8	17/9/16	GSM channel concepts	,,		
29	7/8	19/9/16	Mapping of logical channels	,,		
30	8/8	20/9/16	GSM identifiers	,,		
31	1/7	21/9/16	UNIT - 5 GSM system operation.	,,		
32	2/7	23/9/16	Initialization Operations	,,		
33	3/7	24/9/16	Traffic cases	Board, chalk, duster		
34	4/7	26/9/16	Roaming,	,,		
35	5/7	27/9/16	Handover	,,		
36	6/7	28/9/16	GSM protocol architecture	Projector , Board, chalk, duster		
37	7/7	29/9/16	TDMA systems	,,		
38	1/6	3/10/16	UNIT - 6 CDMA technology	,,		
39	2/6	4/10/16	CDMA overview	Board, chalk, duster		
40	3/6	5/10/16	CDMA channel concept	,,		
41	4/6	6/10/16	Generation of different channels	Projector , Board, chalk, duster		
42	5/6	7/10/16	CDMA operations.	,,		

43	6/6	13/10/16	Comparison between CDMA and GSM architectures.	,,		
44	1/6	14/10/16	UNIT - 7 Wireless Modulation techniques and Hardware	,,		
45	2/6	17/10/16	Characteristics of air Interface & Path loss models	,,		
46	3/6	18/10/16	Wireless coding techniques	,,		
47	4/6	19/10/16	Digital modulation techniques - OFDM	,,		
48	5/6	21/10/16	UWB radio techniques	,,		
49	6/6	22/10/16	Diversity techniques & Typical GSM Hardware	Projector , Board, chalk, duster		
50	1/6	27/10/16	UNIT - 8 Introduction to wireless LAN 802.11X technologies	,,		
51	2/6	28/10/16	Evolution of wireless LAN technology	,,		
52	3/6	2/11/16	Introduction to 802.15X technologies in PAN - Application and architecture Bluetooth	,,		
53	4/6	4/11/16	Introduction to Broadband wireless MAN, 802.16X technologies	,,		
54	5/6	6/11/16	Wireless MAN	,,		
55	6/6	7/11/16	Applications & Revision	Board, chalk, duster		
56	-	8/11/16	Revision and Question Paper Discussion	,,		
57	-	9/11/16	Revision and Question Paper Discussion	,,		

Signature of faculty **Signature of HOD** **Signature of Principal**

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER : VII
BRANCH : TCE
SUBJECT : DSPA
SUBJECT CODE: 10TE74
NO OF HRS/WK: 5

NAME OF THE FACULTY : Mrs.Daliya.v.k
DATE OF COMMENCEMENT : 01.08.2016
DATE OF CLOSING : 19.11.2016
CLASS STRENGTH : 49
TOTAL HRS : 74

Session No	Chapter no (No of hrs planned for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	**1/1**	01.08.2016	Unit 1:Introduction to DSP: A Digital Signal-Processing System, The Sampling Process, Discrete Time Sequences	Board, chalk, duster	Assignment- I	
2	**2/1**	02.08.2016	Discrete Fourier Transform (DFT) and Fast Fourier Transform (FFT)	,,		
3	**3/1**	04.08.2016	Linear Time-Invariant Systems, Digital Filters	,,		
4	**4/1**	05.08.2016	Decimation and Interpolation	,,		
5	**5/1**	06.08.2016	"	,,		
6	**6/1**	08.08.2016	Problems	,,		
7	**1/2**	09.08.2016	Unit 2:Architecture to Programmable DSP processors- Introduction, Basic Architectural Features, DSP Computational Building Blocks-Parallel Multiplier.	Board, chalk, duster		

8	**2/2**	11.08.2016	DSP Computational Building Blocks-Shifter, MAC unit	,,		
9	**3/2**	12.08.2016	DSP Computational Building Blocks-ALU	Board, chalk, duster		
10	**4/2**	13.08.2016	Bus Architecture and Memory	,,		
11	**5/2**	16.08.2016	Data Addressing Capabilities, Problems	,,	Assignment -II	
12	**6/2**	18.08.2016	Data Addressing Capabilities-Specialized Addressing modes	,,		
13	**7/2**	19.08.2016	Programmability and Program Execution	,,		
14	**8/2**	20.08.2016	Speed Issues-Hardware Architecture, Parallelism, Pipelining	,,		
15	**9/2**	22.08.2016	System level parallelism and pipelining	,,		
16	**10/2**	23.08.2016	Features for External Interfacing	,,		
17	**1/3**	25.08.2016	Unit 3-Programmable DSP processors :Introduction, Commercial Digital Signal-Processing			
18	**2/3**	26.08.2016	Data Addressing Modes of TMS320C54xx-Bus structure, CPU	,,		
19	**3/3**	27.08.2016	Data Addressing Modes of TMS320C54xx-Immediate, Absolute, Accumulator, Direct Addressing	,,	Assignment –III	
20	**4/3**	29.08.2016	Data Addressing Modes of TMS320C54xx- Memory-mapped, Stack Addressing	,,		
21	**5/3**	30.08.2016	Circular Addressing, Problems for Addressing modes	,,		
22	**6/3**	01.09.2016	Stack Addressing, Indirect, Problems for Addressing modes	,,		
23	**7/3**	02.09.2016	Problems for Addressing modes	,,		
24	**8/3**	06.09.2016	Memory Space of TMS320C54xx Processors	,,		

25	**9/3**	08.09.2016	Program Control	,,		
26	**10/3**	09.09.2016	Problems	,,		
27	**1/4**	10.09.2016	Unit 4:Detail Study of TMS320C54X & 54xx Instructions and Programming	Board, chalk, duster		
28	**2/4**	12.09.2016	,,	,,	Assignment –IV	
29	**3/4**	13.09.2016	,,	,,		
30	**4/4**	15.09.2016	On-Chip peripherals, Interrupts of TMS320C54XX	,,		
31	**5/4**	16.09.2016	Processors Pipeline Operation of TMS320C54xx Processor	,,		
32	**6/4**	17.09.2016	Problems for Pipelining	,,		
33	**1/5**	19.09.2016	Unit 5:Implementation of Basic DSP Algorithms: Introduction, The Q-notation, Problems for Q-notation	,,		
34	**2/5**	20.09.2016	FIR Filters, Program for FIR Filter	,,		
35	**3/5**	22.09.2016	,,	,,		
36	**4/5**	23.09.2016	IIR Filters, Program for IIR Filter	,,		
37	**5/5**	23.09.2016	,,	,,		
38	**6/5**	24.09.2016	Interpolation filters, Program	,,		
39	**7/5**	26.09.2016	Decimation Filters, Examples, Program	,,		
40	**1/6**	27.09.2016	Unit 6:Implementation of FFT Algorithms:Introduction, An FFT Algorithm for DFT Computation,	,,		
41	**2/6**	29.09.2016	Overflow and Scaling, Bit-Reversed Index Generation	,,	Assignment –V	
42	**3/6**	30.09.2016	8-Point FFT Program implementation on the TMS32OC54xx	,,		
43	**4/6**	01.10.2016	,,	,,		

44	**5/6**	03.10.2016	,,	,,		
45	**1/7**	04.10.2016	Unit 7:Interfacing of Memory and I/O peripherals: Introduction, Memory Space Organization	,,		
46	**2/7**	06.10.2016	External Bus Interfacing Signals, Memory Interface,	Board, chalk,		
47	**3/7**	07.10.2016	Problems for memory interface	,,	Assignment –VI	
48	**4/7**	08.10.2016	,,	,,		
49	**5/7**	13.10.2016	Parallel I/O Interface, Programmed I/O	,,		
50	**6/7**	14.10.2016	Interrupts and I/O	,,		
51	**7/7**	17.10.2016	Direct memory access	,,		
52	**8/7**	18.10.2016	,,	,,		
53	**9/7**	20.10.2016	Memory design examples	,,		
54	**1/8**	21.10.2016	Unit 8:Interfacing and applications of DSP processors-Introduction, Synchronous Serial Interface	,,		
55	**2/8**	22.10.2016	, A Multichannel buffered serial port (McBSP)	,,		
56	**3/8**	24.10.2016	A CODEC Interface Circuit	,,		
57	**4/8**	25.10.2016	CODEC-DSP Interface Example A DSP System	,,		
58	**5/8**	27.10.2016	‘’	,,		
59	**6/8**	28.11.2016	‘A DSP System, DSP Based Bio-telemetry Receiver’	,,		
60	**7/8**	30.11.2016	‘’	,,		
61	**8/8**	02.11.2016	A Speech Processing System	,,		
62	**9/8**	03.11.2016	‘’	,,		
63	**10/8**	4.11.2016	An Image Processing System.			
64	**11/8**	5.11.2016	‘’			

65		7.11.2016	Revision Unit 1			
66		9.11.2016	Revision Unit 2			
67		10.11.2016	Revision Unit 3			
68		11.11.2016	Revision Unit 4			
69		12.11.2016	Revision Unit 5			
70		14.11.2016	Revision Unit 6			
71		16.11.2016	Revision Unit 7			
72		17.11.2016	Revision Unit8			
73		18.11.2016	Test- first 4 units			
74		19.11.2016	Test-last 4 units			

Signature of faculty Signature of HOD Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

Semester : VII
Branch : TCE
Subject : Embedded System Design
Subject Code : 10TE765
No Of Hrs/ Wk: 5

Name Of The Faculty : VINAY B K
Date Of Commencement : 25.07.2016
Date Of Closing : 19.11.2016
Class Strength : 38
Total Hrs : 60

Session No	Chapter no (No of hrs planed for the chapter)	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered as per plan
1	**1/1**	**Unit1: Introduction to Embedded System**- Introducing Embedded Systems, Philosophy	Board & chalk		

2	**2/1**	Embedded Systems, Embedded System Design	,,	Assignment- I	
3	**3/1**	Development Process	,,		
4	**4/1**	Embedded design life cycle	,,		
5	**1/2**	**Unit 2: The Hardware Side**: An Introduction, The Core Level	,,		
6	**2/2**	Representing Information, Understanding Numbers	,,		
7	**3/2**	Addresses, Instructions	,,		
8	**4/2**	Registers-A First Look, Embedded Systems-A Register View, Register View of a Microprocessor	,,		
9	**5/2**	Embedded Systems-An Instruction Set View	,,	Assignment -II	
10	**6/2**	The Hardware Side: Storage Elements	,,		
11	**7/2**	Finite-State Machines The concepts of State and Time, The State Diagram	,,		
12	**8/2**	Finite State Machines- A Theoretical Model.	,,		
13	**1/3**	**Unit 3: Memories and the Memory Subsystem**: Classifying Memory, A General Memory Interface, ROM Overview	LCD Projector		
14	**2/3**	Static RAM Overview	,,		
15	**3/3**	Dynamic RAM Overview	,,		
16	**4/3**	Chip Organization, Terminology	,,		
17	**5/3**	A Memory Interface in Detail, SRAM Design	,,	Assignment –III	
18	**6/3**	DRAM Design	,,		
19	**7/3**	DRAM Memory Interface	,,		
20	**8/3**	The Memory Map, Memory Subsystem Architecture	,,		
21	**9/3**	Basic Concepts of Caching, Designing a Cache System	,,		
22	**10/3**	Dynamic Memory Allocation.	,,		
23	**1/4**	**Unit 4: Embedded Systems Design and Development** : System Design and	Board & chalk		

		Development, Life-cycle Models			
24	**2/4**	Life-cycle Models	,,		
25	**3/4**	Problem Solving-Five Steps to Design, The Design Process	,,		
26	**4/4**	Identifying the Requirements, Formulating the Requirements Specification	,,		
27	**5/4**	The System Design Specification	,,	Assignment –IV	
28	**6/4**	System Specifications versus System Requirements, Partitioning and Decomposing a System	,,		
29	**7/4**	Functional Design	,,		
30	**8/4**	Architectural Design	,,		
31	**9/4**	Functional Model versus Architectural Model, Prototyping	LCD Projector		
32	**10/4**	Other Considerations, Archiving the Project.	,,		
33	**1/5&6**	**Unit 5 & 6: Real-Time Kernels and Operating Systems**: Tasks and Things, Programs and Processes	LCD Projector		
34	**2/5&6**	The CPU is a resource	,,		
35	**3/5&6**	Threads – Lightweight and heavyweight	,,	Assignment -V	
36	**4/5&6**	Sharing Resources, Foreground/ Background Systems	,,		
37	**5/5&6**	The operating System, The real time operating system (RTOS)	,,		
38	**6/5&6**	OS architecture	,,		
39	**7/5&6**	Tasks and Task control blocks	,,	Assignment -VI	
40	**8/5&6**	Tasks and Task control blocks	,,		
41	**9/5&6**	Memory management revisited	,,		
42	**10/5&6**	Memory management revisited	,,		
43	**1/7&8**	**Unit 7 & 8: Performance Analysis and Optimization**:	,,		

		Performance or Efficiency Measures, Complexity Analysis			
44	**2/7&8**	The methodology	,,		
45	**3/7&8**	Analyzing code	,,	Assignment -VII	
46	**4/7&8**	Instructions in Detail	,,		
47	**5/7&8**	Time, etc. – A more detailed look, Response Time	,,		
48	**6/7&8**	Time Loading	,,		
49	**7/7&8**	Memory Loading	,,		
50	**8/7&8**	Evaluating Performance, Thoughts on Performance Optimization	Board & chalk	Assignment -VIII	
51	**9/7&8**	Performance optimization, Tricks of the Trade	,,		
52	**10/7&8**	Hardware Accelerators	,,		
53	**11/7&8**	Caches and Performance.	,,		
54	**12/7&8**	Revision	,,		

Signature of faculty Signature of HOD Signature of Principal

Literature:

Book Type	**Code**	**Author & Title**	**Publication info**	
			Edition & Publisher	**ISBN #**
Text Book1	TB1	**Embedded Systems – A contemporary Design Tool,** James K. Peckol	John Weily India Pvt. Ltd, 2008	978-81-265-2456-3
Reference Book1	RB1	**Embedded Systems: Architecture and Programming,** Raj Kamal	TMH. 2008	978-0-07-066764-8
Reference Book2	RB2	**Embedded Systems Architecture – A Comprehensive Guide for Engineers and Programmers**, Tammy Noergaard	Elsevier Publication, 2005	--
Reference Book3	RB3	**Programming for Embedded Systems**, Dreamtech Software Team	John Wiley India Pvt. Ltd, 2008	--

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE
OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication

SEMESTER :VII
BRANCH : TCE
SUBJECT : Image Processing
SUBJECT CODE : 10EC763
NO OF LECTURES/WK : 5

NAME OF THE FACULTY : Prasoon AK
DATE OF COMMENCEMENT : 01.08.2016
DATE OF CLOSING : 09.11.2016
CLASS STRENGTH : 54 (Sec A & B)
TOTAL HRS : 55

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1.	**Pre-requisites**	01.08.2016	Introduction to image processing	Board, chalk, ppt		
2.	**Pre-requisites**	02.08.2016	Origins of digital image processing	PPT		
3.	**Pre-requisites**	03.08.2016	Examples of fields that use digital image processing	,,		
4.	**1/1**	04.08.2016	Fundamental steps in digital image processing system	Board, chalk, ppt		
5.	**2/1**	05.08.2016	Components of an image processing system	,,		
6.	**3/1**	08.08.2016	Elements of visual perception: Structure of human eye, Image formation in the eye	PPT		
7.	**4/1**	09.08.2016	Brightness Adaptation and discrimination	,,	A1	

8.	**1/2**	10.08.2016	Image sensing and acquisition: Single sensor, sensor strips, sensor arrays	,,		
9.	**2/2**	11.08.2016	A simple image formation model, Image sampling and quantization, Representing digital images	,,		
10.	**3/2**	12.08.2016	Spatial and gray level resolution, Zooming and shrinking, Relationships between pixels: Neighbors, adjacency, connectivity, Distance measures	,,		
11.	**4/2**	17.08.2016	Problems on relationship between pixels	Board, chalk	Exercise on VTU questions	
12.	**1/5**	18.08.2016	Image enhancement in spatial domain: Introduction	Board, chalk, ppt		
13.	**2/5**	19.08.2016	Point processing, Image negative, Contrast enhancement	Board, chalk, ppt		
14.	**3/5**	20.08.2016	Logarithmic and power-law transformation	Board, chalk, ppt		
15.	**4/5**	22.08.2016	Gray-level and bit-plane slicing, Histogram Processing-Introduction	Board, chalk, ppt		
16.	**5/5**	24.08.2016	Histogram Equalization and problems	Board, chalk, ppt		
17.	**6/5**	25.08.2016	Histogram specification and problems	Board, chalk, ppt		
18.	**7/5**	26.08.2016	Local Enhancement and Enhancement using arithmetic/logic operations	Board, chalk, ppt		
19.	**8/5**	27.08.2016	Basics of spatial filtering	Board, chalk,	Assignment using	

				ppt	Matlab(A2)	
20.	**1/3**	29.08.2016	Image Transforms: Two dimensional orthogonal & unitary transforms	Board, chalk		
21.	**2/3**	31.08.2016	Two dimensional orthogonal & unitary transforms	Board, chalk		
22.	**3/3**	01.09.2016	Properties of unitary transforms	Board, chalk	Exercise on VTU questions	
23.	**4/3**	02.09.2016	Properties of unitary transforms	Board, chalk		
24.	**5/3**	09.09.2016	Two dimensional discrete Fourier transform.	Board, chalk		
25.	**6/3**	10.09.2016	Two dimensional discrete Fourier transform.	Board, chalk		
26.	**1/4**	14.09.2016	Discrete cosine transform	Board, chalk		
27.	**2/4**	15.09.2016	Discrete cosine transform	Board, chalk		
28.	**3/4**	16.09.2016	Sine transform	Board, chalk		
29.	**4/4**	17.09.2016	Hadamard transform	Board, chalk		
30.	**5/4**	19.09.2016	Haar transform	Board, chalk		
31.	**6/4**	21.09.2016	Slant transform	Board, chalk		
32.	**7/4**	22.09.2016	KL transform	Board, chalk	A3	
33.	**1/6**	23.09.2016	Image enhancement in the Frequency Domain filters	Board, Chalk,ppt		
34.	**2/6**	24.09.2016	Smoothing Frequency Domain filters-Ideal, Butterworth	Board, Chalk,ppt		
35.	**3/6**	26.09.2016	Smoothing Frequency Domain filters-	Board, Chalk,ppt		

			Gaussian			
36.	**4/6**	28.09.2016	Smoothing Frequency Domain filters-Additional examples	Board, Chalk,ppt		
37.	**5/6**	29.09.2016	Sharpening Frequency Domain filters-Ideal, Butterworth	Board, Chalk,ppt		
38.	**6/6**	03.10.2016	Sharpening Frequency Domain filters-Gaussian	Board, Chalk,ppt		
39.	**7/6**	04.10.2016	Sharpening Frequency Domain filters-Laplacian	Board, Chalk,ppt		
40.	**8/6**	05.10.2016	Unsharp masking,High-boost filtering,High frequency emphasis filtering	Board, Chalk,ppt		
41.	**9/6**	07.10.2016	Homomorphic filtering	Board, Chalk,ppt	A4	
42.	**1/7**	08.10.2016	Model of image degradation/restoration process, noise models	Board, Chalk,ppt		
43.	**2/7**	13.10.2016	Restoration in the Presence of Noise, Only-Spatial Filtering	Board, Chalk,ppt		
44.	**3/7**	14.10.2016	Periodic Noise Reduction by Frequency Domain Filtering	Board, Chalk,ppt		
45.	**4/7**	17.10.2016	Linear Position-Invariant Degradations	Board, Chalk,ppt		
46.	**5/7**	19.10.2016	inverse filtering, minimum mean square error (Weiner) Filtering	Board, Chalk,ppt	A5	
47.	**1/8**	20.10.2016	Color Fundamentals	Board, Chalk,ppt		
48.	**2/8**	21.10.2016	Color Models	Board, Chalk,ppt		
49.	**3/8**	22.10.2016	Pseudo color Image Processing	Board, Chalk,ppt		
50.	**4/8**	27.10.2016	Color Fundamentals. Color Models	Board, Chalk,ppt		
51.	**5/8**	02.11.2016	Pseudo color Image Processing	Board, Chalk,ppt		

52.	**6/8**	03.11.2016	Basics of full color image processing	Board, Chalk,ppt	A6	
53.	-	04.11.2016	Revision	Board, Chalk,ppt		
54.	-	05.11.2016	Revision	Board, Chalk,ppt		
55.	-	07.11.2016	Revision	Board, Chalk,ppt		

Signature of faculty Signature of HOD Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Telecommunication Engineering

SEMESTER : VII
BRANCH : TCE
SUBJECT : OS
SUBJECT CODE : 10EC751
NO OF HRS/WK : 5

NAME OF THE FACULTY : Harikrishnan
DATE OF COMMENCEMENT : 01.08.2016
DATE OF CLOSING : 09.11.2016
CLASS STRENGTH : 52
TOTAL HRS : 60

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	**1/1**	**01/08/16**	Pre-requisite	Board, chalk, duster		
2	**2/1**	**02/08/16**	INTRODUCTION AND OVERVIEW OF OPERATING SYSTEMS:Operating system, Goals of an O.S, Operation of an O.S	,,		
3	**3/1**	**03/08/16**	Resource allocation and related functions, User interface related functions	,,		
4	**4/1**	**04/08/16**	Classes of operating systems, O.S and the computer system	,,		
5	**5/1**	**05/08/16**	Batch processing system, Multi programming systems, Time sharing systems	,,		
6	**6/1**	**08/08/16**	Real time operating systems, distributed operating systems	,,		
7	**7/1**	**09/08/16**	Class Test -1		Assignment- I	
8	**1/2**	**10/08/16**	STRUCTURE OF THE OPERATING SYSTEMS:	,,		

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

CMR INSTITUTE OF TECHNOLOGY

Session wise – Course Plan

Department of Electronics and Communication

SEMESTER :VII
BRANCH : TCE
SUBJECT :RTS
SUBJECT CODE :10EC762
NO OF HRS/WK :5

NAME OF THE FACULTY: Sudatta Mohanty
DATE OF COMMENCEMENT:28.07.2016
DATE OF CLOSING : 19.11.2016
CLASS STRENGTH : 62
TOTAL HRS:52

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	**1/1**	28.07.16	Introduction to subject, Discussion on syllabus, Briefing on assignments and IAT.	Board, chalk, duster		
2	**2/1**	01.08.16	Definition and classification of real time systems	,,		
3	**3/1**	02.08.16	Time Constraints, types, definitions and descriptions.	,,		
4	**4/1**	03.08.16	Classification of programs, descriptions	,,		
5	**5/1**	05.08.16	Discussion of Assignment questions	,,		
6	**1/2**	06.08.16	Introduction – Concepts of computer control	,,		
7	**2/2**	08.08.16	sequence control, example	,,		

8	**3/2**	09.08.16	Loop control, supervisory control	Board, chalk, duster		
9	**4/2**	10.08.16	Possible questions, Centralized Computer Control	,,		
10	**5/2**	12.08.16	Distributed Systems, Human Computer Interface,	,,		
11	**6/2**	16.08.16	Adaptive Control System, PID control, benefits of Computer Control	,,	Assignment- I	
12	**1/3**	17.08.16	Hardware requirements for real time applications	,,		
13	**2/3**	18.08.16	General Purpose Computer, Single Chip Microcontroller	,,		
14	**3/3**	19.08.16	specialized processors introduction	,,		
15	**4/3**	22.08.16	Parallel Processors, DSPs			
16	**5/3**	23.08.16	Process Related Interfaces Introduction			
17	**6/3**	24.08.16	Digital Signal Input Interfaces, READ Signal Timing Diagram			
18	**7/3**	25.08.16	Digital Signal Output Interfaces , pulse Interfaces	,,		
19	**8/3**	26.08.16	Analog Input & Output Interfaces	,,		
20	**9/3**	29.08.16	Real Time Clock, Computer System Showing Communication Tasks	,,		
21	**10/3**	30.08.16	Data Transfer Techniques, Polling, Interrupts	,,	Assignment -II	
22	**11/3**	31.08.16	Saving & storing Registers, Communications, Standard Interfaces	,,		
23	**12/3**	01.09.16	Exercise questions Discussion		Assignment -II	
24	**1/4**	02.09.16	Languages for real time applications, Special features of languages for real time applications	Board, chalk, duster		
25	**2/4**	10.09.16	Declaration & Initialization Of Variables, Modularity	,,		
26	**3/4**	13.09.16	Compilation, Review of data types – Derived types, sub	,,		

			range types, pointers			
27	**4/4**	14.09.16	concurrency, exception handling, Control Structure	,,		
28	**5/4**	15.09.16	Coroutines, low-level facilities	,,		
29	**6/4**	16.09.16	Interrupts And Device Handling	,,		
30	**7/4**	19.09.16	Concurrency and real time Support	,,		
31	**8/4**	20.09.16	Overview of real time languages, Modula-2 and Ada as a Real Time Languages	,,		
32	**9/4**	21.09.16	Exercise questions Discussion	,,	Assignment -III	
33	**1/5**	22.09.16	Real Time Operating Systems – Schduling strategies	Board, chalk, duster		
34	**2/5**	23.09.16	Code sharing, Resource control	,,		
35	**3/5**	26.09.16	Scheduler and real-time clock interrupt handler	,,		
36	**4/5**	27.09.16	Inter task communication and control	,,		
37	**5/5**	28.09.16	Example of creating RTOS based on modula 2 kernel,	,,		
38	**1/5**	29.09.16	Practical Real Time Operating Systems	,,		
39	**2/5**	03.10.16	Exercise questions Discussion	,,	Assignment -IV	
40	**1/6**	05.10.16	Introduction to design of real time systems, Specification documentation, Preliminary design	,,		
41	**2/6**	06.10.16	Multi-tasking approach, Monitors,	,,		
42	**3/6**	07.10.16	Rendezvous, Exercise questions Discussion	,,	Assignment -V	
43	**1/7**	08.10.16	Numerical	,,		
44	**1/7**	13.10.16	Developmental methodologies - Yourdon methodology, Ward and Mellor method	,,		

45	**2/7**	17.10.16	Hatley and Pirbhai method, MASXOT, PAIISLEY SystemPAIISLEY System	,,		
46	**1/8**	18.10.16	Introduction, Petri nets, Analysis of Petri nets	,,		
47	**2/8**	19.10.16	Scheduling problem Real time database, Real Time Vs General Purpose,	,,		
48	**3/8**	20.10.16	Concurrency control, Databases, Transaction priorities and Aborts	Disk scheduling algorithms		
49	**4/8**	21.10.16	Maintaining serialization consistency, faults	Board, chalk, duster		
50	**5/8**	22.10.16	Errors and failures, Fault types, detection and containment	,,		
51	**6/8**	27.10.16	Redundancy, Failure handling, Reliability Evaluation – Parameters	,,		
52	**7/6**	28.10.16	Reliability models for hardware , Software error models	,,	Assignment -VI	

Signature of faculty Signature of HOD Signature of Principal

			Operation of an O.S,			
9	**2/2**	**11/08/16**	Structure of the supervisor	Board, chalk, duster		
10	**3/2**	**12/08/16**	Configuring and installing of the supervisor	,,		
11	**4/2**	**17/08/16**	Operating system with monolithic structure, layered design	,,		
12	**5/2**	**18/08/16**	Virtual machine operating systems	,,		
13	**6/2**	**19/08/16**	Kernel based operating systems	,,		
14	**7/2**	**20/08/16**	Microkernel based operating systems	,,		
15	**8/2**	**22/08/16**	Class Test -2		Assignment -II	
16	**1/3**	**24/08/16**	PROCESS MANAGEMENT: Process concept	,,		
17	**2/3**	**25/08/16**	Programmer view of processes,			
18	**3/3**	**26/08/16**	OS view of processes			
19	**4/3**	**27/08/16**	Interacting processes			
20	**5/3**	**29/08/16**	Threads, Processes in UNIX	,,		
21	**6/3**	**31/08/16**	Threads in Solaris	,,		
22	**7/3**	**01/09/16**	Class Test -3		Assignment –III	
23	**1/4**	**02/09/16**	MEMORY MANAGEMENT: Memory allocation to programs	,,		
24	**2/4**	**09/09/16**	Memory allocation preliminaries	,,		
25	**3/4**	**10/09/16**	Contiguous and noncontiguous allocation to programs	,,		
26	**4/4**	**14/09/16**	Contiguous and noncontiguous allocation to programs	"		
27	**5/4**	**15/09/16**	Memory allocation for program controlled data	"		

28	**6/4**	**16/09/16**	Memory allocation for program controlled data	,,		
29	**7/4**	**17/09/16**	kernel memory allocation	,,		
30	**8/4**	**19/09/16**	Class Test -4			
31	**1/5**	**21/09/16**	VIRTUAL MEMORY: Virtual memory basics	,,	Assignment –IV	
32	**2/5**	**22/09/16**	Virtual memory using paging, Demand paging	,,		
33	**3/5**	**23/09/16**	Page replacement, Page replacement policies	,,		
34	**4/5**	**24/09/16**	Memory allocation to programs	,,		
35	**5/5**	**26/09/16**	Page sharing	,,		
36	**6/5**	**28/09/16**	UNIX virtual memory	,,		
37	**7/5**	**29/09/16**	Class Test -5		Assignment -V	
38	**1/6**	**03/10/16**	FILE SYSTEMS: File system and IOCS, Files and directories	,,		
39	**2/6**	**04/10/16**	Overview of I/O organization	Board, chalk, duster		
40	**3/6**	**05/10/16**	Fundamental file organizations	,,		
41	**4/6**	**07/10/16**	Interface between file system and IOCS	,,		
42	**5/6**	**08/10/16**	Allocation of disk space	,,		
43	**6/6**	**13/10/16**	Implementing file access	,,		
44	**7/6**	**14/10/16**	UNIX file system	,,		
45	**8/6**	**17/10/16**	Class Test -6		Assignment -VI	
46	**1/7**	**19/10/16**	SCHEDULING: Fundamentals of scheduling	,,		

47	**2/7**	**20/10/16**	Long-term scheduling	,,		
48	**3/7**	**21/10/16**	Medium and short term scheduling	,,		
49	**4/7**	**22/10/16**	Real time scheduling	,,		
50	**5/7**	**27/10/16**	Real time scheduling	,,		
51	**6/7**	**02/11/16**	Process scheduling in UNIX.	,,		
52	**7/7**	**03/11/16**	Class Test -7		Assignment -VII	
53	**1/8**	**04/11/16**	MESSAGE PASSING: Implementing message passing	,,		
54	**2/8**	**05/11/16**	MESSAGE PASSING: Implementing message passing	,,		
55	**3/8**	**07/11/16**	Mailboxes	,,		
56	**4/8**	**09/11/16**	Mailboxes	,,		

Signature of faculty Signature of HOD Signature of Principal