IV YEAR SEM-II B.Tech CSE	ELECTIVE	L	T	P	C
Code: CS4601	Real Time Operating Systems	2	2	0	4

UNIT-I: REVIEW OF OPERATING SYSTEMS

Overview, OS structures, system calls, process cooperation, process communication, semaphores, conditional critical regions, deadlock, processor management, scheduling algorithms, Queuing system model.

UNIT-IIAN INTRODUCTION TO RTOS

Introduction to RTOS, types of RTOS, GPOS vs RTOS, applications of RTOS

UNIT-III: REAL TIME MODELS AND LANGUAGES

Event Based – Process Based and Graph based Models – Pertinent Models – Real Time Languages – RTOS Tasks – RT scheduling - Interrupt processing – Synchronization – Control Blocks – Memory Requirements.

UNIT-IV: REAL TIME KERNEL

Principles – Design issues – Polled Loop Systems – RTOS Porting to a Target – Comparison and study of RTOS VX works and μCOS – Case studies

UNIT-V: RTOS APPLICAION DOMAINS

RTOS for Image Processing – Embedded RTOS for voice over IP – RTOS for fault Tolerant Applications – RTOS for Control Systems.

UNIT-VI: DISTRIBUTED OPERATING SYSTEMS

Distributed operating systems concept, file systems, mode of computation, load balancing, event ordering, synchronization, distributed mutual exclusion, drinking philosophers problem, deadlocks in distributed systems.

Text Books:

1. R.Mall, Real Time Systems: Theory and Practice, Pearson Education, 2007.
2. C.M.Krishna and K.G.Shin, Real Time Systems, Tata McGraw Hill, 1997.
3. Jane Liu, Real Time Systems, Pearson Education, 2000.

References:

1. Tanenbaum, “Distributed Operating Systems”, Pearson Education.
2. Raymond J.A.Bhur, Donald L.Bailey, “An Introduction to Real Time Systems”, PHI 1999.