GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. Embedded Systems (Branch Code - 54)

Year – I (Semester – I) (W.E.F. July 2013)

Subject: Real Time Operating System Fundamentals (715402)

Sr. No.	Course Content	Hours
1	**Inter-process Communication and Synchronization of processes, Thread and Task:** Multiple process and thread in application, Task and Task state, Task-control block, Task coding, Task scheduling, Semaphores, Semaphores for synchronization, Data sharing and deadlocks, Inter process communication, Sockets and remote procedure call.	12
2	**Operating system service, Process management, Timer and Event:** function, Memory management, Device , File and I/O subsystem management, Interrupt routine in RTOS environment and handling of interrupt service calls, Basic design using RTOS, RTOS task scheduling models, Interrupt latency and response of tasks as performance metrics, OS security issue.	15
3	**Real Time Operating System Example:** Operating System related functions provided by RL-RTX for Initialization, Task Scheduling, Semaphore, Mailbox and Message handling,	8
4	**Study of Micro C/OSII Real Time Operating System**	5

Reference Books:

1. Introduction to Embedded Systems, Author: Shibu K V, Publisher: Tata McGraw-Hill Publication
2. Embedded System: Architecture, Programming and Design, Second Edition, Author: Rajkamal, Publisher: Tata McGraw-Hill Publication
3. Micro C/OS-II : The real time kernel, Second Edition, Author: Jean J. Labrosse, Publisher: CMP Books