

## (EC502)RTOS FOR EMBEDDED SYSTEMS

### **Objective of the Course :**

*To introduce the concepts of Real Time Operating Systems used in real time applications of Embedded Systems*

### **UNIT - I**

**OPERATING SYSTEMS :** Overview of Operating Systems, Time Service & Scheduling Mechanisms, Other Basic Operating System function, Processor reserves and resource kernel, Capabilities of commercial Real Time Operating systems.

### **UNIT - II**

**INTRODUCTION TO REAL TIME SYSTEMS:** Typical Real Time Applications, Hard Vs Soft Real Time Systems, A reference model of Real Time Systems, Processors & Resources, Temporal Parameters of Real time Workload, Periodic Task model, Precedence Constraints & Data Dependency Functional Parameters.

### **UNIT - III**

**RTOS CONCEPTS:** Mailboxes, Message Queues, Event Registers, Pipes, Signals.

### **UNIT - IV**

**INTRODUCTION TO VxWORKS OPERATING SYSTEM:** Memory Management Task State Transition Diagram, Pre-Emptive Priority Scheduling, Context Switching, Semaphore-Binary Mutex, Watch dogs, counting.

### **UNIT - V**

**INTRODUCTION TO RTLinux:** Overview, Process Management, Scheduling, Interrupt Management, and Synchronization.

### **REFERENCE BOOKS :**

1. Jane W.S.Liu, Real Time Systems, Pearson Education. [www.kernel.org](http://www.kernel.org) [www.linuxhq.com](http://www.linuxhq.com)