

REAL TIME OPERATING SYSTEM DEV

CODE: (RTOS-1M)

1. INTRODUCTION TO RTOS

- a. RTOS BASICS
- b. RTOS VS. GENERAL PURPOSE OPERATING SYSTEM
- c. TYPES OF KERNELS
- d. TYPE OF RTOS
 - i. HARD RTOS
 - ii. SOFT RTOS

2. TORNADO IDE-2.0

- a. ARCHITECTURE
- b. WIND SHELL
- c. TARGET SERVER
- d. Vx-SIM
- e. WIND-DEBUG

3. VxWORKS5.4 ARCHITECTURE

4. TASK MANAGEMENT IN VxWORKS

5. CPU SCHEDULING

- a. ROUND ROBIN
- b. RR WITH KERNEL TIME SLICE
- c. PRIORITY BASED PRE-EMPTIVE

6. PRIORITY INVERSION

7. DELETION SAFETY

8. WATCHDOG TIMERS

9. MULTI TASKING

10. INTER TASK COMMUNICATION ON VxWORKS

- a. SEMAPHORE
- b. SHARED MEMORY
- c. MESSAGE QUEUES

11. SOCKET PROGRAMMING

12. TARGET DEVICE BRINGING-UP ACTIVITY

- a. PREPARING TARGET DEVICE
- b. BOOTING UP TARGET DEVICE
- c. ATTACHING TARGET DEVICE

13. PORTING APPLICATION ON TARGET DEVICE

14. REMOTE DEBUGGING

15. KERNEL CUSTOMIZATION AND PORTING

16. INTRODUCTION TO BSP DEVELOPMENT

17. INTRODUCTION TO NANO KERNEL

18. PROJECT WORK

- a. TFTP
- b. MULTI-TASKING WITH MESSAGE QUEUE
- c. TELNET SERVER
- d. EMBEDDED WEB SERVER
- e. UART DEVICE DRIVER DEVELOPMENT
- f. TARGET DEVICE BRING-UP ACTIVITY