EMBEDDED SYSTEMS & ROBOTICS :LEVEL 3

Note: [(P)] stands for practical classes along with theory.

MODULE I: ARM7

ARM7 : (8hrs)

- Introduction
- Feature
- Architecture
- Input/output port
- Timer
- Serial communication
- Interrupt
- ADC

HARDWARE INTERFACING [(P)]: (8hrs)

- LED
- Seven segment
- Switches
- Sensors
- Motors
- Relay
- Buzzer
- LCD
- Keypad
- ADC
- RF module

MODULE I I:LINUX SYSTEM PROGRAMMING

- Basic of Operating system,
- Process management
- scheduling,
- Semaphore
- Type of signal and signal handling
- IPC using shared memory
- memory management
- pipes
- Message queues
- posix threads
- synchronizations primitive
- socket programming
- GCC complier

MODULE III:RTOS And Applications Development

- Real time concept
- os vs. RTOS
- VXWORKS
- kernel Architecture
- Multitasking
- Concept of VXWORK
- Programming

MODULE IV:Linux Device Driver Development

- General Functions of the Device Deriver
- Type of devices driver
- Physical i/o
- major and minor number
- configure and install the kernel
- loader versus static driver
- interrupt handling
- Character Driver:
- Data transport between user mode and kernel mode,
- error code the IOCTLs interface
- Block Driver:
- Buffer management
- Request Queues
- the request-routine
- interrupt and start routines
- PCI driver
- Networking
- Transmission and receptions Functionality