

MT8791 EMBEDDED SYSTEM DESIGN

DETAILED SYLLABUS

OBJECTIVES:

- To provide the overview of embedded system design principles
- To understand the concepts of real time operating systems
- To provide exposure to embedded system development tools with hands on experience in using basic programming techniques.

UNIT I INTRODUCTION TO EMBEDDED SYSTEMS

Overview of embedded systems, embedded system design process, challenges - common design metrics and optimizing them. Hardware - Software code sign embedded product development.

UNIT II REAL TIME OPERATING SYSTEM

Real time operating systems Architecture - Tasks and Task states - Tasks and Data - Semaphore and shared data - Message queues, mail boxes and pipes - Encapsulating semaphores and queues - interrupt routines in an RTOS Environment. Introduction to Vx works, RT Linux.

UNIT III PIC MICROCONTROLLER

Architecture - Instruction set - Addressing modes - Timers - Interrupt logic - CCP modules - ADC.

UNIT IV EMBEDDED NETWORKING

Introduction - CAN BUS - I2C - GSM - GPRS - Zig bee.

UNIT V EMBEDDED PROGRAMMING LABORATORY: LIST OF EXPERIMENTS

I/O Programming

Interrupts and Timer application

Interfacing Keypad

Interfacing LCD

Interfacing ADC/DAC

TEXT BOOKS:

1. Frank Vahid, Tony John Givargis, Embedded System Design: A Unified Hardware/ Software Introduction - Wiley & Sons, Inc.2002.
2. Rajkamal, 'Embedded System – Architecture, Programming, Design', Tata Mc Graw Hill, 2011
3. John B. Peatman, "Design with PIC Microcontrollers" Prentice Hall, 2003.

Diploma, Anna Univ UG & PG Courses

Notes
Syllabus
Question Papers
Results and Many more...

Available @

www.AllAbtEngg.com

REFERENCES

1. Steve Heath, 'Embedded System Design', II edition, Elsevier, 2003.
2. David E. Simon, "An embedded software primer", Addison – Wesley, Indian Edition Reprint (2009).
3. Robert Foludi "Building Wireless Sensor Networks", O'Reilly, 2011.