

PART - B

UNIT 5 **8 Hours**
Introduction to Network Security, Authentication Applications: Attacks, services, and Mechanisms; Security Attacks; Security Services; A model for Internetwork Security; Internet Standards and RFCs Kerberos, X.509 Directory Authentication Service.

UNIT 6 **6 Hours**
Electronic Mail Security: Pretty Good Privacy (PGP); S/MIME

UNIT 7 **6 Hours**
IP Security: IP Security Overview; IP Security Architecture; Authentication Header; Encapsulating Security Payload; Combining Security Associations; Key Management.

UNIT 8 **6 Hours**
Web Security: Web security requirements; Secure Socket layer (SSL) and Transport layer Security (TLS); Secure Electronic Transaction (SET)

Text Books:

1. Michael E. Whitman and Herbert J. Mattord: Principles of Information Security, 2nd Edition, Cengage Learning, 2005. (Chapters 5, 6, 7, 8; Exclude the topics not mentioned in the syllabus)
2. William Stallings: Network Security Essentials: Applications and Standards, 3rd Edition, Pearson Education, 2007. (Chapters: 1, 4, 5, 6, 7, 8)

Reference Book:

1. Behrouz A. Forouzan: Cryptography and Network Security, Special Indian Edition, Tata McGraw-Hill, 2007.

MICROCONTROLLER-BASED SYSTEMS

Subject Code: 10IS836
Hours/Week : 04
Total Hours : 52

I.A. Marks : 25
Exam Hours: 03
Exam Marks: 100

PART - A

UNIT 1 **7 Hours**
Introduction, 8051 Assembly Language Programming - 1: Microcontrollers and embedded processors; Overview of the 8051 family
8051 Assembly Language Programming (ALP) -1: Inside the 8051;

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Dept. Of Information Science & Engineering
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

Introduction to 8051 ALP; Assembling and running an 8051 program; The PC and ROM space in 8051; Data types, directives, flag bits, PSW register, register banks, and the stack.

UNIT 2

6 Hours

ALP – 2: Jump and loop instructions; Call instructions; Time delay for various 8051 family members; I/O programming; I/O bit manipulation programming. Immediate and register addressing modes; Accessing memory using various addressing modes.

UNIT 3

7 Hours

ALP – 3 - Programming in C: Bit addresses for I/O and RAM; Extra 128 bytes of on-chip RAM in 8052. Arithmetic instructions; Signed numbers and arithmetic operations; Logic and compare instructions; rotate instruction and serialization; BCD, ASCII, and other application programs. Programming in C: Data types and time delays; I/O programming; Logic operations; Data conversion programs; Accessing code ROM space; Data serialization.

UNIT 4

6 Hours

Pin Description, Timer Programming: Pin description of 8051; Intel Hex file; Programming the 8051 timers; Counter programming; Programming Timers 0 and 1 in C.

PART – B

UNIT 5

6 Hours

Serial Port Programming, Interrupt Programming: Basics of serial communications; 8051 connections to RS232; Serial port programming in assembly and in C 8051 interrupts; Programming timer interrupts; Programming external hardware interrupts; Programming the serial communications interrupt; Interrupt priority in 8051 / 8052; Interrupt programming in C.

UNIT 6

7 Hours

Interfacing LCD, Keyboard, ADC, DAC and Sensors : LCE interfacing; Keyboard interfacing; Parallel and serial ADC; DAC interfacing; Sensor interfacing and signal conditioning

UNIT 7

7 Hours

Interfacing to External Memory, Interfacing with 8255: Memory address decoding; Interfacing 8031 / 8051 with external ROM; 8051 data memory space; Accessing external data memory in C. Interfacing with 8255; Programming 8255 in C.

UNIT 8

DS12887 RTC interfacing and Programming, Applications : 6 Hours
DS12887
RTC interfacing; DS12887 RTC programming in C; Alarm, SQW, and IRQ
features of DS12886 Relays and opto-isolators; Stepper motor interfacing;
DC motor interfacing and PWM

Text Books:

1. Muhammad Ali Mazidi, Janice Gillispie Mazidi, Rolin D. McKinlay: The 8051 Microcontroller and Embedded Systems using Assembly and C, 2nd Edition, Pearson Education, 2008.

Reference Books:

1. Raj Kamal: Microcontrollers Architecture, Programming, Interfacing and System Design, Pearson Education, 2007.
2. Dr. Ramani Kalpathi, Ganesh Raja: Microcontrollers and Applications, 1st Revised Edition, Sanguine - Pearson, 2010.

ADHOC NETWORKS

Sub Code: 10IS841

Hrs/Week: 04

Total Hrs: 52

IA Marks : 25

Exam Hours : 03

Exam Marks : 100

PART - A

UNIT 1

Introduction: Ad hoc Networks: Introduction, Issues in Ad hoc wireless networks, Ad hoc wireless internet. 6 Hours

UNIT 2

MAC - 1: MAC Protocols for Ad hoc wireless Networks: Introduction, Issues in designing a MAC protocol for Ad hoc wireless Networks, Design goals of a MAC protocol for Ad hoc wireless Networks, Classification of MAC protocols, Contention based protocols with reservation mechanisms. 7 Hours

UNIT 3

MAC - 2: Contention-based MAC protocols with scheduling mechanism, MAC protocols that use directional antennas, Other MAC protocols. 6 Hours

UNIT 4

Routing - 1: Routing protocols for Ad hoc wireless Networks: Introduction, Issues in designing a routing protocol for Ad hoc wireless Networks, Classification of routing protocols, Table drive routing protocol, On-demand routing protocol. 7 Hours

S. Chakraborty
H.O.D.