

SEMESTER VI

(Applicable to the students admitted from the Academic year 2006 – 2007 onwards)

Code No.	Course Title	L	T	P	M
THEORY					
1	Engineering Management	4	0	0	100
2	Network Programming and Management	4	0	0	100
3	Cryptography and Network Security	4	0	0	100
4	Visual Programming	4	0	0	100
5	Fundamentals of Digital Signal Processing	4	0	0	100
6	Elective I	4	0	0	100
PRACTICAL					
1	Visual Programming Lab	0	0	3	100
2	Network Lab using Java	0	0	3	100
3	Mini Project				

SEMESTER VI

ENGINEERING MANAGEMENT (Common to VI SEM CSE)

OBJECTIVE

Knowledge on the principles of management is essential for all kinds of people in all kinds of organizations. After studying this course, students will be able to have a clear understanding of the managerial functions like planning, organizing, staffing, leading and controlling. Students will also gain some basic knowledge on international aspect of management.

1. HISTORICAL DEVELOPMENT 9

Definition of Management – Science or Art – Management and Administration – Development of Management Thought – Contribution of Taylor and Fayol – Functions of Management – Types of Business Organisation.

2. PLANNING 9

Nature & Purpose – Steps involved in Planning – Objectives – Setting Objectives – Process of Managing by Objectives – Strategies, Policies & Planning Premises- Forecasting – Decision-making.

3. ORGANISING 9

Nature and Purpose – Formal and informal organization – Organization Chart – Structure and Process – Departmentation by difference strategies – Line and Staff authority – Benefits and Limitations – De-Centralization and Delegation of Authority – Staffing – Selection Process - Techniques – HRD – Managerial Effectiveness.

4. DIRECTING 9

Scope – Human Factors – Creativity and Innovation – Harmonizing Objectives – Leadership – Types of Leadership Motivation – Hierarchy of needs – Motivation theories – Motivational Techniques – Job Enrichment – Communication – Process of Communication – Barriers and Breakdown – Effective Communication – Electronic media in Communication.

5. CONTROLLING 9

System and process of Controlling – Requirements for effective control – The Budget as Control Technique – Information Technology in Controlling – Use of computers in handling the information – Productivity – Problems and Management – Control of Overall Performance – Direct and Preventive Control – Reporting – The Global Environment – Globalization and Liberalization – International Management and Global theory of Management.

TOTAL : 45

TEXT BOOKS

1. Harold Koontz & Heinz Weihrich “Essentials of Management”, Tata McGraw-Hill, 1998.
2. Joseph L Massie “Essentials of Management”, Prentice Hall of India, (Pearson) Fourth Edition, 2003.

REFERENCES

1. Tripathy PC And Reddy PN, “ Principles of Management”, Tata McGraw-Hill, 1999.
2. Decenzo David, Robbin Stephen A, ”Personnel and Human Resources Management”, Prentice Hall of India, 1996
3. JAF Stomer, Freeman R. E and Daniel R Gilbert Management, Pearson Education, Sixth Edition, 2004.
4. Fraidoon Mazda, “Engineering Management”, Addison Wesley, 2000.

TOTAL : 45 HRS

TEXT BOOKS

1. W. Richard Stevens, "UNIX NETWORK PROGRAMMING Vol-I" Second Edition, PHI / Pearson Education, 1998. (Units – I, II, III & IV.) (Chapter – 1-10, 23, 25)
2. William Stallings, "SNMP, SNMPv2, SNMPv3 and RMON 1 and 2", Third Edition, Addison Wesley, 1999. (Unit - V) (Chapter – 4-7)

REFERENCE

1. D.E. Comer, "Internetworking with TCP/IP Vol- III", (BSD Sockets Version), second Edition, PHI, 2003.

SEMESTER VI

CRYPTOGRAPHY AND NETWORK SECURITY

AIM

To understand the principles of encryption algorithms; conventional and public key cryptography. To have a detailed knowledge about authentication, hash functions and application level security mechanisms.

OBJECTIVES

- To know the methods of conventional encryption.
- To understand the concepts of public key encryption and number theory
- To understand authentication and Hash functions.
- To know the network security tools and applications.
- To understand the system level security used.

UNIT I INTRODUCTION 10

OSI Security Architecture - Classical Encryption techniques – Cipher Principles – Data Encryption Standard – Block Cipher Design Principles and Modes of Operation - Evaluation criteria for AES – AES Cipher – Triple DES – Placement of Encryption Function – Traffic Confidentiality

UNIT II PUBLIC KEY CRYPTOGRAPHY 10

Key Management - Diffie-Hellman key Exchange – Elliptic Curve Architecture and Cryptography - Introduction to Number Theory – Confidentiality using Symmetric Encryption – Public Key Cryptography and RSA.

UNIT III AUTHENTICATION AND HASH FUNCTION 9

Authentication requirements – Authentication functions – Message Authentication Codes – Hash Functions – Security of Hash Functions and MACs – MD5 message Digest algorithm - Secure Hash Algorithm – RIPEMD – HMAC Digital Signatures – Authentication Protocols – Digital Signature Standard

UNIT IV NETWORK SECURITY 8

Authentication Applications: Kerberos – X.509 Authentication Service – Electronic Mail Security – PGP – S/MIME - IP Security – Web Security.

UNIT V SYSTEM LEVEL SECURITY 8

Intrusion detection – password management – Viruses and related Threats – Virus Counter measures – Firewall Design Principles – Trusted Systems.

TUTORIAL

15

TOTAL : 60

TEXT BOOK

1. William Stallings, "Cryptography And Network Security – Principles and Practices", Prentice Hall of India, Third Edition, 2003.

REFERENCES

1. Atul Kahate, "Cryptography and Network Security", Tata McGraw-Hill, 2003.
2. Bruce Schneier, "Applied Cryptography", John Wiley & Sons Inc, 2001.
3. Charles B. Pfleeger, Shari Lawrence Pfleeger, "Security in Computing", Third Edition, Pearson Education, 2003.

- building a web client – Internet Information Server – ISAPI server extension – chat application
- playing and multimedia (sound and video) files

TOTAL : 45

TEXT BOOKS

1. Charles Petzold, “Windows Programming”, Microsoft press, 1996 (Unit I – Chapter 1-9)
2. David J.Kruglinski, George Shepherd and Scot Wingo, “Programming Visual C++”, Microsoft press, 1999 (Unit II – V)

REFERENCES

1. Steve Holtzner, “Visual C++ 6 Programming”, Wiley Dreamtech India Pvt. Ltd., 2003.

SEMESTER VI

FUNDAMENDALS OF DIGITAL SIGNAL PROCESSING

(COMMON for V-SEM BME, V SEM MECE, VI-SEM CSE, VI SEM EEE and VI-SEM IT)

1. DISCRETE – TIME SIGNALS AND SYSTEMS 9

Sampling of Analogue signals – aliasing – standard discrete time signals – classification – discrete time systems – Linear time invariant stable casual discrete time systems – classification methods – linear and circular convolution – DFS,. Time response and frequency response analysis of discrete time systems to standard input signals. Z transform – Properties

2. DFT & FFT 9

DTFT-Discrete Fourier transforms and Properties – Linear filtering- Fast Fourier transform (FFT) & DIT & DIF Algorithms.

3. IIR FILTER DESIGN 9

Structure of IIR – System Design of Discrete time IIR filter from continuous time filter – IIR filter design by Impulse Invariance-Bilinear transformation – Design of IIR filter in the Frequency domain.

4. FIR FILTER DESIGN 9

Symmetric & Antisymmetric FIR filters – Linear phase filter – Windowing technique – Rectangular, Kaiser Windows – Frequency sampling techniques – Structure for FIR systems.

5. SPECIAL TOPICS IN DSP 9

Periodogram - QMF filters -Principles of Multirate DSP-Interpolation - Decimation by Integer factor- Sub band coding - Polyphase rectification

TEXT BOOK:

1. John G.Proakis and Dimitus G.Manolakis, “Digital Signal Processing, Principles, Algorithms and applications, Prentice Hall of India, New Delhi 3rd edition, 2002.

REFERENCES:

1. Sanjit K.Mitra ‘Digital Signal Processing’, A Computer Based Approach, Tata McGraw-Hill, New Delhi, 1998.
2. Allan V. Oppenheim et al & Schaffer , " Discrete time signal Processing ".

SEMESTER VI

VISUAL PROGRAMMING LAB

(Common to IV SEM CSE)

LIST OF EXPERIMENTS

Windows SDK / Visual C++

Writing code for keyboard and mouse events.

Dialog Based applications

Creating MDI applications

Visual C++

Threads

Document view Architecture, Serialization

Dynamic controls

Menu, Accelerator, Tool tip, Tool bar

Creating DLLs and using them

Data access through ODBC

10. Creating ActiveX control and using it

SEMESTER VI

NETWORKING LAB

(Common to V SEM CSE)

LIST OF EXPERIMENTS:

Write a socket Program for Echo/Ping/Talk commands

Create a socket (TCP) between two computers and enable file transfer between them.

Write a program to implement Remote Command Execution (Two M/Cs may be used)

Create a socket (UDP)

Write a code simulating ARP /RARP.

Create a socket for HTTP for web page upload & Download.

Write a program for TCP module Implementation.(TCP services)

Write a program for File Transfer in client-server architecture using following methods.

USING RS232C

TCP/IP

Write a program to implement RMI (Remote Method Invocation)

Perform a case study about the different routing algorithms to select the network path with its optimum and economical during data transfer.

Shortest path routing

Flooding

Flow based routing

Distance vector

Link State

Hierarchical

Broadcast /Multicast routing

SEMESTER VI

MINI PROJECT

(Common to VI SEM CSE)

- 1 The objective of Mini Project is to provide opportunity for the student to apply the knowledge acquired during the academic programme to real-life problems which he/she may have to face in future as an engineer
- 2 Three periods per week shall be allotted in the time table for the activity and this time shall be utilized by the students to receive guidance from the members of faculty on solving real-life problems, practice solving these problems , seminar presentation as assigned by the faculty member in-charge
- 3 The continuous assessment and semester evaluation may be carried out as specified in the guidelines to be issued from time to time and finally he/she should submit the report.