



AKU B.E./B.Tech IT Sem 7 syllabus

Wireless and Mobile Communication

06 1x11 WIRELESS & MOBILE COMMUNICATION

Credit : 3

- 1. Wireless Transmission :** History, Overview, Signals, Antennas, Signal Propagation, Multiplexing, Modulation, Spread Spectrum.
- 2. Media Access Control :** MAC, SDMA, TDMA, CDMA, Spread Aloha Multiple Access.
- 3. Telecommunication System :** GSM, DECT, TETRA.
- 4. Wireless LAN :** Infrared Vs Radio Transmission, IEEE 802.11 standard, Concept of HIPERLAN and Bluetooth technology.
- 5. Mobile Technology :** Mobile-IP, Mobile transport layer, Mobile TCP, Concept of WAP and WML.
- 6. J2ME :** Overview, Small computing technology. Its architecture and development environment, Lifecycle, MIDP, Commands, Items and Event processing, High level display screen and low level display screen.

Text Books :

- (1) Mobile Communication 2/e by Schiller (Pearson Education).
- (2) J2ME : The Complete Reference by Keogh (Tata McGraw-Hill).
- (3) Beginning J2ME from Novice to Professional by Singli Jonathan (Wiley India)

Reference Books :

(1) Wireless Communications & Network by Stallings (Pearson Education)

(2) Wireless and Mobile All – IP Networks by Lin & Pang (Wiley India).

(3) Core J2ME Technology and MIDP Muchow (Pearson Education Asia – Sun)

(4) Beginning Mobile Phone Game Programming Morrison (Pearson Education).

06 1x05 INFORMATION SECURITY

Credit : 3

1. Introduction, CRYPTO BASICS : Classic Crypto, Simple Substitution Cipher, Cryptanalysis of a simple substitution, Double Transposition Cipher, One-time Pad, Project VENONA, Codebook Cipher.

2. SYMMETRIC KEY CRYPTO : Stream Ciphers, A5/1, RC4, Block Ciphers, Fiestel Cipher, DES, Triple DES, AES.

3. PUBLIC KEY CRYPTO : Knapsack, RSA, Diffie-Hellman, Uses for Public Key Crypto.

4. HASH FUNCTION : AUTHENTICATION : Authentication Methods, Keys versus Passwords, Biometrics, Two-Factor Authentication. **AUTHORIZATION :** Access Control Matrix, Multilevel Security Models, Firewalls, Intrusion Detection.

5. SOFTWARE FLAWS AND MALWARE : Software Flaws, Malware, Miscellaneous Software-Based Attacks.

6. OPERATING SYSTEM AND SECURITY : Operating System Security Functions, Trusted Operating System, Next Generation Secure Computing Base.

Text Book :

(1) Information Security Principles & Practices by Mark Stamp, Wiley.

Reference Books :

(1) Introduction to Computer Security by Bishop and Venkatramanayya, Pearson Education.

(2) Cryptography and Network Security : Principles and Practice by Stallings, PHI.

06 1x07 DISTRIBUTED COMPUTING & ITS APPLICATION

Credit: 5

1. Introduction to Distributed Computing Systems : Different forms of Computing Distributed Computing Programming.

2. Java & Distributed Computing : Socket API (TCP and UDP based Sockets), Remote Method Invocation (RMI), Introduction to Remote procedure Call, RPC implementation in Java using RMI, Concept of CORBA.

3. Understanding Servlet Programming : Using Servlets, its life cycle, Deploying Servlets on Web Server, Working with Request and Response Object, Understanding Servlet Sessions, Session tracking mechanism.

4. Understanding of JSP : Understanding the web page life cycle in JSP, JSP Documents, its Elements, JSP Tag extensions, Tag libraries and its validation.

5. Working with Enterprise Java beans : EJB Overview, Client, view of a Session Bean, Session Bean Component Contract. Session Bean Lifecycle, Client view of an Entity, Component Contract for ContainerManaged Persistence (CMP), CMP Entity Bean Lifecycle, Entity Beans, EJB-QL, Message-Driven Bean Component Contract, Transaction, Exceptions, Enterprise Bean Environment, Security Management.

Text Books :

(1) Distributed Computing – Principles and Applications by M.L.Liu (Pearson Education)

(2) Java – How to Programme by Deitel & Deitel (3) J2EE 1.4 Bible by

Reference Books :

- (1) Java Server Programming (Black Book) (Dreamtech Press)
- (2) The J2EE tutorial 2/e by Bodoff, (Sun-Pearson Education Asia)

24 1X02 PERSONNEL MANAGEMENT AND INDUSTRIAL RELATION

Credits: 3

1. Meaning, concept, function, & importance of personnel management, role of a personnel manager, personnel policies - Need of a personnel policies, organization of personnel Department (functional basis, service basis and chentile basis)

2. Manpower planning : Meaning & concept, need for manpower planning, types of manpower planning, meaning and concept of job analysis, job description & job specification, uses of job analysis information, Recruitment, selection – meaning and steps of selection process, meaning of induction

3. Training and develop : Meaning, need & importance for training, method of training, development - meaning of development, method of development.

4. (a) Performance appraised : Meaning, Objective, method of performance appraisal . (b) Transfer : meaning objective, types. (c) Promotion : Meaning , policies, basis of promotion. (d) Separation : Resignation, Discharge & Dismissal, Suspension & Retrenchment, Layoff.

5. Wages and salary administration : (a) Meaning purpose & principle of wage & salary administration, factors influencing wage & salary administration. (b) Meaning of wage & salary, minimum wage , fair wage& living , wage. (c) Meaning of money and real wage. (d) Methods of wage payment - time rate & piece rate. (e) Incentive- Financial Incentive& non financial Incentive, method of wage payment based on result.

6. (a) Health, safety and welfare facilities. (b) social security - (i)

meaning and concepts, objective. (ii) form of social security- social insurance & social assistance. (c) Problem arising from disease, invalidity, accident, old age and unemployment.

7. (a) Industrial Relation : meaning & concept, changing concept of industrial relation, role played by the employer, trade union & government, current I. R. position in India, I.R. policies of government of India. **(b) Trade Union :** Meaning and concept, objective, functions, type, method of trade union.

Text Books :

1. Personal management by C.B. Memoria & G.V. Gankar- Himalaya
2. Personal management & industrial relation by P.C. Tripathi-S. Chand

Reference Book :

1. Industrial relation, Trade Union & Labour Relation by G.P. Sinha & P.R.N. Sinha, Pearson.

Information Security

INFORMATION SECURITY

CREDITS - 03

1. Introduction, CRYPTO BASICS : Classic Crypto, Simple Substitution Cipher, Cryptanalysis of a simple substitution, Double Transposition Cipher, One time Pad, Project VENONA, Codebook Cipher.

2. SYMMETRIC KEY CRYPTO : Stream Ciphers, A5/1, RC4, Block Ciphers, Feistel Cipher, DES, Triple DES, AES.

3. PUBLIC KEY CRYPTO : Knapsack, RSA, Diffie Hellman, Uses for Public Key Crypto.

4. HASH FUNCTION :

AUTHENTICATION : Authentication Methods, Keys versus Passwords, Biometrics, Two Factor Authentication.

AUTHORIZATION : Access Control Matrix, Multilevel Security Models, Firewalls, Intrusion Detection.

5.SOFTWARE FLAWS AND MALWARE : Software Flaws, Malware, Miscellaneous Software Based Attacks.

6.OPERATING SYSTEM AND SECURITY : Operating System Security Functions, Trusted Operating System, Next Generation Secure Computing Base.

Reference Books :

- 1.Introduction to Computer Security by Bishop and Venkatramanayya, Pearson Education.
2. Cryptography and Network Security : Principles and Practice by Stallings, PHI.

Distributed Computing and its Applications

06 1x07 DISTRIBUTED COMPUTING & ITS APPLICATION **Credit : 5**

- 1. Introduction to Distributed Computing Systems :** Different forms of Computing Distributed Computing Programming.
- 2. Java & Distributed Computing :** Socket API (TCP and UDP based Sockets), Remote Method Invocation (RMI), Introduction to Remote procedure Call, RPC implementation in Java using RMI, Concept of CORBA.
- 3. Understanding Servlet Programming :** Using Servlets, its life cycle, Deploying Servlets on Web Server, Working with Request and Response Object, Understanding Servlet Sessions, Session tracking mechanism.
- 4. Understanding of JSP :** Understanding the web page life cycle in JSP, JSP Documents, its Elements, JSP Tag extensions, Tag libraries and its validation.
- 5. Working with Enterprise Java beans :** EJB Overview, Client, view of a Session Bean, Session Bean Component Contract. Session Bean Lifecycle, Client view of an Entity, Component Contract for Container-Managed Persistence (CMP), CMP Entity Bean Lifecycle, Entity Beans, EJB-QL, Message-Driven Bean Component Contract, Transaction, Exceptions, Enterprise Bean Environment, Security Management.

Text Books :

- (1) Distributed Computing - Principles and Applications by M.L.Liu (Pearson Education)
- (2) Java - How to Programme by Deitel & Deitel
- (3) J2EE 1.4 Bible by Megovern (Wiley India)

Reference Books :

- (1) Java Server Programming (Black Book) (Dreamtech Press)
- (2) The J2EE tutorial 2/e by Bodoff, (Sun-Pearson Education Asia)

Personnel Management and Industrial Relation

PERSONNEL MANAGEMENT AND INDUSTRIAL RELATION

CREDITS - 03

1. Meaning, concept, function , & importance of personnel management, role of a personnel manager, personnel policies Need of a personnel policies, org anization of personnel Department (functional basis, service basis and chentile basis)

2. Manpower planning : Meaning & concept, need for manpower planning, types of manpower planning, meaning and concept of job analysis, job description & job specification, uses of job analysis information, Recruitment, selection meaning and steps of selection process, meaning of induction

3. Training and develop : Meaning, need & importance for training, method of training, development meaning of development, method of development.

4. Performance appraised :(a) Meaning, Objective, method of performance appraisal .

(b) Transfer : meaning objective, types.

(c) Promotion : Meaning , policies, basis of promotion.(Separation : Resignation, Discharge & Dismissal, Suspension & Retrenchment, Layoff.

5. Wages and salary administration :(a). Meaning purpose & principle of wage & salary administration, factors influencing wage & salary adminis tration.

(b). Meaning of wage & salary, minimum wage , fair wage& living , wage.

(c). Meaning of money and real wage.

(d). Methods of wage payment time rate & piece rate.

(e). Incentive Financial Incentive & non financial Incentive, method of wage payment based on result.

6.(a) Health, safety and welfare facilities.

(b) social security

(1) meaning and concepts, objective.

(2) form of social security social insurance & social assistance.

(c) Problem arising from disease, invalidity, accident, old age and unemployment.

7.(a).Industrial Relation : meaning & concept, changing concept of industrial relation, role played by the employer, trade union & government, current I. R. position in India, I.R. policies of government of India.

(b). Trade Union : Meaning and concept, objective, functions, type, method of trade union.

Reference Book :

1. Industrial relation, Trade Union & Labour Relation by G.P.Sinha & PRN Sinha, Pearson.

Management Information System (Elective)

MANAGEMENT INFORMATION SYSTEM

CREDITS - 03

1. Strategic View of Management Information System :

Introduction to MIS : Concept, definition, role, Impact etc., E-business Enterprise : Introduction, E-business, E-commerce, E-communication, e-collaboration, Strategic Management of Business : Corporate Planning, Strategic Planning, Development of Business Strategies, Types of Strategies, Short-Range Planning, MIS : Business Planning, Information Security Challenges in E-enterprises.

2. Basics of Management Information Systems :

Decision Making : Concepts, Process, behavioural concepts, Organisational Decision Making, MIS and Decision Making Concepts, Information : Concepts, Classification, Methods of Collection, Value, Knowledge. Systems : Concepts, Control, Types, handling Complexity, Classes, General Model of MIS, Implementation Problems, MIS and System Concept. System Analysis & Design : Introduction, Need, System Development Model, Structured System Analysis & Design, Computer

System Design, MIS and System Analysis. Development of MIS : Long Range Plans, Class of Information, Information Requirement, Implementation of MIS, Quality in the MIS, Organisation for development of the MIS, MIS : Development Process Model Business Process Re-Engineering : Business Process, Process Model, Value Stream Model, Relevance of IT, MIS and BPR.

3. Applications of Management Information System to E-Business.

4. Application of MIS : Application in Manufacturing Sector. Applications in Service Sector, Decision Support Systems, Enterprise Management Systems.

5. Case Studies : Tata Home Finance Ltd. and Engineering Product Limited.

Reference Books :

1. Management Information Systems, Managing the digital firm by Laudon & Laudon, Pearson.
2. Management Information System by s. Sadagopan, PHI.