AKU B.E./B.Tech ECE Sem 8 syllabus

Personnel Management and Industrial Relations

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 paymen t 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 diseas e , 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.

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, B lock 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.

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

Computer Network

05 1x 13 COMPUTER NETWORKS
L T P : 3 0 0 Credit : 3

1. Introduction : Network Hardware & Software, OSI Reference Model, TCP/IP Model, Comparison of the OSI & TCP/IP model.

2. The Physical Link layer : Guided Transmission Media, Physical Layer Standard.

3. The Data Link Layer : Need for Data Link Control, Service provided by the Data Link Layer, Frame Design Consideration, Flow control Mechanism, Data Link Error control, Error Control in Stop and wait Mechanism & Sliding Window Mechanism, Sequence num bering, Piggybacking Acknowledgements, Data Link Management.

4. MAC Protocols : Random access Protocols ALOHA.

5.IEEE 802.3 Ethernet : Contention Access, CSMA/CD, Physical Topology of Ethernet, Ethernet Repeater, Types of Ethernet.

6. Bridges and Layer 2 Switches : LAN Bridge, Transparent Bridges, Spanning tree algorithm. Source routing bridge, route discovery in source routing, layer 2 Ethernet switches.

7. The network layer : network layer design issue, purpose of network layer, Functions of the Network Layer.

8. Introduction to Internet Protocol : IPv4 Format, ICMP.

9. Routing Algorithms : Static Routing, Dynamic Routing, Distance Vector Routing Algorithm, R outing Information Protocol, Link State Routing, OSPF Routing Protocol. Interior and Exterior Protocol, and Border Gateway Protocol.

10. Introduction to Transport Layer: TCP & UDP.

11. Introduction to Application Layer: TCP/IP Application Protocol.

Text Book:

1. Data Communication & Networking by Forouzan, Tata McGraw Hill.
2. Computer Network, 4e, by Andrew S. Tenenbaum, Pearson Education/ PHI.
3. Data Communication and Computer Networks, by Prakash C.Gupta, PHI.
4. Networking Ali in one Desk Reference by Doug Lowe, Wiley Dreamtech

Reference Books:

1. Computer Networking: A Top Down Approach featuring the Internet, 3e by James F.Kurose.
2. Computer Network by Godbole, Tata McGraw Hill.
3. Computer Networking, by Stanford H. Rowe, Marsha L. Schuh

Microwave Engineering

04 1x 11 MICROWAVE ENGINEERING
L T P : 3 0 3 Credit : 5

1. Microwave oscillators and amplifiers, advantages and uses of microwave, limitations of conventional vacuum tubes at UHF and microwave frequency, UHF and microwave BJT

2. Muticavity klystron , Reflex klystron, Muticavit y travelling wave type magnetron, Backward wave
oscillator, Gunn oscillator, Tunnel diode, IMPATT diode.

3. Microwave components : Coupling probes & Loops, Attenuator, sorting plunger, Magic tee, Directional coupler, Phase Shifters, Isolators &

4. Microwave measurement : Measurement of power, Standing wave detectors and its uses, Impedance

measurement, Measurement of frequencies by wave meters, Attenuation Measurement, Noise factor measurement.

5. Microwave receiver : Block Diagram representation, Varactor Diode as mixer, antenna noise and noise temperature.

6. **Antenna Log Periodic Antenna ,** Slot, Horn & Parabolic antenna (Dish

7. Microwave Links & space communication: Geostation ary satellites, Up Down Links, Fading effect, Atmospheric effects, and solar activities.

Text Books:

1. Microwave devices and circuits by Samuel Y. Laio, PHI.

Reference Books:

1. Microwave & Radar Engineering by M. Kulkarni, Umesh Publications
2. Foundations of Microwave Engineering by R.F. Collins, McGraw Hill.
3. Microwave Principles by Reich et. Al. , Van Hestrand
4. Communication in Space by Jaffen, Halt Renetat Winston.

Linear Control Theory

Linear Control Theory

Credits-05

1. Introduction : The control system, servomechanism, servomotors, standard test signal.

2.Time response analysis : Time response of second order system, design consideration for higher ordersystem, stability relative stability.

3. The root locus technique : Concept, construction of root loci root contours systems with transformation log.

4. Frequency response analysis : Correlation between time and frequency response, bode plots, root locus and minimum phase system log magnetic vs phase plots , stability in frequency domain ,

polar plots.

5. Mathematics preliminaries, Nyquest stability criteria, Assessment of relation stability using Nyquest criteria.

6.Closed loop frequency response.

7 .Compensation of control system : Introduction, type compensation approach to compensation

Text Books :

1.Modern control system by Nagrath & Gopal

Reference Books :

1.Modern Control Engineering by K.Ogata, Pearson Education.

2.Control Engineering by Kuo.