MCSE 201 - Web Technology and Commerce

UNIT-1
Introduction to building blocks of electronic commerce: Internet and networking. Technologies, IP addressing, ARP, RARP, BOOTP, DHCP, ICMP, DNS, TFTP, TELNET.

UNIT-2
Static and dynamic web pages, tiers, plug-ins, frames and forms. Exposure to Markup languages, HTML, DHTML, VRML, SGML, XML etc. CGI, Applets & Serve-lets, JSP & JAVA Beans, active X control, ASP cookies creating and reading cookies, semantic web, semantic web service ontology Comparative case study of Microsoft and JAVA technologies, web server scalability, Distributed objects, object request brokers, component technology, Web services, Web application architectures, Browsers, Search engines.

UNIT-3

UNIT-4
Internet payment system: Characteristics of payment system, 4C payments methods, SET Protocol for credit card payment, E-cash, E-check, Micro payment system, Overview of smart card, overview of Mondex. E-Governance: E-Governance architecture, Public private partnership, Readiness, Security, Cyber Crime and Law, IT Act

UNIT-5

References:
1. Web Technology, Achyut Godbole, Atul Kahate, TMH
4. Satyanarayana, E-Government, PHI
7. Charles Trepper, E Commerce Strategies, Microsoft Press
MCSE- 202 Information theory, coding and cryptography


Unit 3. Error Control Coding: Channel Coding: Linear Block Codes: Introduction, Matrix description, Decoding, Equivalent codes, Parity check matrix, Syndrome decoding, Perfect codes Hamming Codes, Optimal linear codes, Maximum distance separable (MDS) codes. Cyclic Codes: Introduction, generation, Polynomials, division algorithm, Matrix description of cyclic codes, burst error correction, Fire Codes, Golay Codes, and CRC Codes. BCH Codes: Introduction, Primitive elements, Minimal polynomials, Generator Polynomials in terms of Minimal Polynomials, Decoding of BCH codes.

Unit 4 Coding for Secure Communications: Review of Cryptography, Introduction, Encryption techniques and algorithms, DES, IDEA, RC Ciphers, RSA Algorithm, Diffi-Hellman, PGP, Chaos Functions, Cryptanalysis, Perfect security, Unicity distance, Diffusion and confusion, McEliece Cryptosystem

Unit 5 Advance Coding Techniques: Reed-Solomon codes, space time codes, concatenated codes, turbo coding and LDPC codes (in details), Nested Codes, block (in Details), Convolutional channel coding: Introduction, Linear convolutional codes, Transfer function representation & distance properties, Decoding convolutional codes( Soft-decision MLSE, Hard-decision MLSE),The Viterbi algorithm for MLSE, Performance of convolutional code decoders, Soft & Hard decision decoding performance, Viterbi algorithm implementation issues: RSSE, trellis truncation, cost normalization, Sequential decoding: Stack, Fano, feedback decision decoding, Techniques for constructing more complex convolutional codes with both soft and hard decoding.

Text Books and References:
MCSE- 203  Advanced Concept in Data Bases

UNIT-1

DBMS Concept Introduction, Data Model, Entity & Attributes, Relationship, E-R Model, Relational Data Model, Domain Tuples, Attributes, Key, Schema, Integrity Constraints, Relational Algebra & Relational Calculus, Normalization & Normal Form.

Unit-2


Unit-3


Unit-4

Object-Oriented Databases Introduction, Concept of Object Oriented Database, Object Oriented Data Model(OODM), Object-Oriented DBMS(OODBMS), Object Data Management Group and Object-Oriented Languages. Object-Relational DBMS, ORDBMS Design, ORDBMS Query Language.

Unit-5


Data Mining : Data, Information and Knowledge Discovery, Data Mining Functionalities, Data Mining System categorization and its Issues. Data Processing, Data Reduction, Data Mining Statistics. Data Mining Techniques.

References:

1. C. J. Date: An Introduction to Database Systems , Addison-Wesley
2. Avi Silberschatz, Henry F. Korth ,S. Sudarshan ,Data Base System Concepts, TMH
3. Patrick O’Neil & Elizabeth O’Neil, Database Principles, Programming and Performance,
4. Morgan Kaufmann Hardcourt India
5. Gillenson, Fundamental of Data Base Management Sytem, Willey India
6. Ceri & Pelagatti, Distributed Databases Principles & Systems,TMH
7. Paulraj Ponniah, Data Ware Housing Fundamental, Willey India.
8. Jiawei Han, Data Mining Concept & Techniques, Elsevier Pub.
MCSE- 204  System Programming

Unit-1
Overview of language processors, Elements of assembly level programming, Design of assembler, Macro definition, Design of Macro preprocessor, Relocating and linking concepts, Design of linker, Programming Environments.

Unit-II

Unit - III


Unit-IV

Unit-V

References:
1. Dhamdhere, Systems Programming and Operating systems, TMH
2. Keith Cooper, Engineering a Compiler, Elsevier Pub
3. Mak, Writing compilers and Interpreters, Wiley India
4. Singhal & Shivaratri, Advanced concepts in Operating Systems, TMH
5. Sinha, Distributed operating systems, PHI
Unit – I: Introduction of soft computing, soft computing vs hard computing. Soft computing techniques. Computational Intelligence and applications, problem space and searching; Graph searching, different searching algorithms like breadth first search, depth first search techniques, heuristic searching Techniques like Best first Search, A* algorithm, AO* Algorithms.


Unit II: Neural Network: Introduction, Biological neural network: Structure of a brain, Learning methodologies. Artificial Neural Network(ANN): Evolution of, Basic neuron modeling, Difference between AN and human brain, characteristics, McCulloch-Pitts neuron models, Learning (Supervised & Unsupervised) and activation function, Architecture, Models, Hebbian learning, Single layer Perceptron, Perceptron learning, Winrow-Hoff/ Delta learning rule, winner take all, linear Separability, Multilayer Perceptron, Adaline, Madaline, different activation functions Back propagation network, derivation of EBPA, momentum, limitation, Applications of Neural network.


Unit – V: Genetic algorithm: Introduction, working principle, Basic operators and Terminologies like individual, gene, encoding, fitness function and reproduction, Genetic modeling: Significance of Genetic operators, Inheritance operator, cross over, inversion & deletion, mutation operator, Bitwise operator, GA optimization problems, including JSPP (Job shop scheduling problem), TSP (Travelling salesman problem), Applications of GA, Differences & similarities between GA & other traditional methods.


References:-
1. S.N. Shivnandam, “Principle of soft computing”, Wiley India.
2. David Poole, Alan Mackworth “Computational Intelligence: A logical Approach” Oxford.
4. Eiben and Smith “Introduction to Evolutionary Computing” Springer
5. Janga Reddy Manne; “Swarm Intelligence and Evolutionary Computing”; Lap Lambert Academic Publishing
8. D.E. Goldberg “Genetic algorithms, optimization and machine learning” Addison Wesley