NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR
DEPARTMENT OF INFORMATION TECHNOLOGY

SEMESTER: VI

S.No.	Board of Studies	Sub.Code	Subject Name	Periods/week			Examination Scheme					Total Marks	Credits L+(T+P)/2
				L	T	P	TA	FE	SE	T.C.A.	ESE		
1	Information Technology	IT 601	Compiler Design	4	1	-	20	15	15	50	70	120	5
2	Information Technology	IT 602	Information Theory & Coding	3	1	-	20	15	15	50	70	120	4
3	Information Technology	IT 603	Internet & Web Technologies	3	1	-	20	15	15	50	70	120	4
4	Information Technology	IT 604	Cellular & Mobile Computing	3	1	-	20	15	15	50	70	120	4
5	Information Technology	IT 605	Software Engineering	3	1	-	20	15	15	50	70	120	4
6	Information Technology	IT 60X	Elective II	3	1	-	20	15	15	50	70	120	4
7	Information Technology	IT 691	Compiler Design Lab	-	-	3	30	-	-	30	20	50	2
8	Information Technology	IT 692	Web Technology Lab	-	-	3	30	-	-	30	20	50	2
9	Information Technology	IT 693	Software Technology Lab	-	-	3	30	-	-	30	20	50	2
10	Humanities		I & E Skill	-	-	2	25	-	-	25	0	25	1
11			Discipline	-	-	-	25	-	-	25	0	25	1
			Total	19	6	11	260	90	90	440	480	920	33

Elective II		
Sr.No.	Sub.Code	Subject Name
1	IT 606	Industrial Economics & Management
2	IT 607	Advanced Database Management Systems
3	IT 608	Advanced Data Structures and Algorithm
4	IT 609	Multimedia and Virtual Reality
5	IT 610	Neural Network and Fuzzy Logic
6	IT 611	System Analysis and Design

Note : For attendance of a student in every theory and practical class, the teachers are supposed to keep records ultimately in the following format which will be included in the semester mark-sheets.

T.C.A. = Total of Continuous Assessment.

Format for attendance				
Attendance				Category
> 85			----->	High "H"
> 70 & < 85			----->	Medium "M"
> 60 & < 70			----->	Low "L"
< 60			----->	Poor "P"

NATIONAL INSTITUTE OF TECHNOLOGY, RAIPUR, CG 492010
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SEMESTER – VI

"Compiler Design"

Theory Periods: 40   Tutorials: "10"
Credits: 5   Code: IT 601

UNIT –1: INTRODUCTION
Introduction to Compiler, single and multi-pass compilers, Translators, Phases of Compilers, Compiler writing tools, Bootstrapping, Backpatching. Finite Automata and Lexical Analyzer: Role of Lexical Analyzer, Specification of tokens, Recognition of tokens, Regular expression, Finite automata, from regular expression to finite automata transition diagrams, Implementation of lexical analyzer Tool for lexical analyzer LEX, Error reporting.

UNIT-2: SYNTAX ANALYSIS AND PARSING TECHNIQUES
Context free grammars, Bottom-up parsing and top down parsing. Top down Parsing: elimination of left recursion, recursive descent parsing, Predicative Parsing ,Bottom Up Parsing : Operator precedence parsing, LR parsers, Construction of SLR, canonical LR and LALR parsing tables, Construction of SLR parse tables for Ambiguous grammar, the parser generator – YACC, error recovery in top down and bottom up parsing.

UNIT – 3: SYNTAX DIRECTED TRANSLATION & INTERMEDIATE CODE GENERATION
Synthesized and inherited attributes, dependency graph, Construction of syntax trees, bottom up and top down evaluation of attributes, S-attributed and L-attributed definitions ,Postfix notation; Three address codes, quadruples, triples and indirect triples, Translation of assignment statements, control flow, Boolean expression and Procedure Calls.

UNIT- 4: RUNTIME ENVIRONMENT
Storage organization, activation trees, activation records, allocation strategies, Parameter passing symbol table, dynamic storage allocation.

UNIT – 5: CODE OPTIMIZATION & CODE GENERATION
Basic blocks and flow graphs, Optimization of basic blocks, Loop optimization, Global data flow analysis, Loop invariant computations. Issue in the design of Code generator, register allocation, the target machine, and simple Code generator.

Name of Text Books:
1. Compilers-Principles, Techniques and Tools, Alfred V. Aho, Ravi Sethi and   Ullman J.D., Addison Wesley.
2. Principle of Compiler Design, Alfred V. Aho, and J.D. Ullman, Narosa Publication.

Name of Reference Books:

1. Compiler design in C, A.C. Holub, PHI.
2. Compiler construction (Theory and Practice), A.Barret William and R.M. Bates, Galgotia Publication.
3. Compiler Design, Kakde.

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SEMESTER – VI

"Information Theory and Coding"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 602

UNIT I: INFORMATION ENTROPY FUNDAMENTALS

Uncertainty, Information and Entropy – Source coding Theorem – Huffman coding – Shannon Fano coding – Discrete Memory less channels – channel capacity – channel coding Theorem – Channel capacity Theorem.

UNIT II: DATA AND VOICE CODING

Differential Pulse code Modulation – Adaptive Differential Pulse Code Modulation – Adaptive subband coding – Delta Modulation – Adaptive Delta Modulation – Coding of speech signal at low bit rates (Vocoders, LPC).

UNIT III: ERROR CONTROL CODING

Linear Block codes – Syndrome Decoding – Minimum distance consideration – cyclic codes – Generator Polynomial – Parity check polynomial – Encoder for cyclic codes – calculation of syndrome – Convolutional codes.

UNIT IV: COMPRESSION TECHNIQUES

Principles – Text compression – Static Huffman Coding – Dynamic Huffman coding – Arithmetic coding – Image Compression – Graphics Interchange format – Tagged Image File Format – Digitized documents – Introduction to JPEG standards.

UNIT V: AUDIO AND VIDEO CODING

Linear Predictive coding – code excited LPC – Perceptual coding, MPEG audio coders – Dolby audio coders – Video compression – Principles – Introduction to H.261 & MPEG Video standards.

Name of Text Books:
1. Simon Haykin, "Communication Systems", John Wiley and Sons, 4th Edition, 2001.
2. Fred Halsall, "Multimedia Communications, Applications Networks Protocols and Standards", Pearson Education, Asia 2002.

Name of Reference Books:

1. Mark Nelson, "Data Compression Book", BPB Publication 1992.
2. Watkinson J"Compression in Video and Audio", Focal Press, London, 1995.

"Internet and Web Technologies"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 603

UNIT-I: INTRODUCTION TO INTERNET
Introduction, Evolution of Internet, Internet Applications,Internet Protocol -TCP/IP, UDP, HTTP, Secure Http(Shttp) Internet Addressing – Addressing Scheme – Ipv4 & IPv6, Network Byte Order, Domain Name Server and IP Addresses, Mapping, Internet Service Providers, Types Of Connectivity Such As Dial-Up Leaded Vsat Etc. Web Technologies: Three Tier Web Based Architecture; Jsp, Asp, J2ee, .Net Systems.

UNIT-II: HTML CSS AND SCRIPTING
HTML - Introduction, Sgml, Dtd(Document Type Definition, Basic Html Elements, Tags and usages, HTML Standards , Issues in HTML Dhtml: Introduction Cascading Style Sheets: Syntax ,Class Selector, Id Selector Dom (Document Object Model) & Dso (Data Source Object) Approaches To Dynamic Pages: Cgi, Java Applets, Plug Ins, Active X, Java Script – Java Script Object Model, Variables-Constant – Expressions, Conditions- Relational Operators- Data Types – Flow Control – Functions & Objects-events and event handlers – Data type Conversion & Equality – Accessing HTML form elements.

UNIT-III: XML
What is XML – Basic Standards, Schema Standards, Linking & Presentation Standards, Standards that build on XML, Generating XML data, Writing a simple XML File, Creating a Document type definition, Documents & Data ,Defining Attributes & Entities in the DTD ,Defining Parameter Entities & conditional Sections, Resolving a naming conflict, Using Namespaces, Designing an XML data structure, Normalizing Data, Normalizing DTDS.

UNIT-IV: INTERNET SECURITY & FIREWALLS
Security Threats From Mobile Codes, Types Of Viruses, Client Server Security Threats, Data & Message Security, Various electronic payment systems, Introduction to EDI, Challenges–Response System, Encrypted Documents And Emails , Firewalls: Hardened Firewall Hosts, Ip- Packet Screening, Proxy Application Gateways, Aaa (Authentication ,
Authorization And Accounting).

UNIT-V: WEBSITE PLANNING & HOSTING
Introduction, Web Page Lay-Outing, Where To Host Site, Maintenance Of Site, Registration Of Site On Search Engines And Indexes, Introduction To File Transfer Protocol, Public Domain Software, Types Of Ftp Servers (Including Anonymous),Ftp Clients Common Command. Telnet Protocol, Server Domain, Telnet Client, Terminal Emulation. Usenet And Internet Relay Chat.

Name of Text Books:
1. Internet & Intranet Engineering,- Daniel Minoli, TMH.
2. Alexis Leon and Mathews Leon – Internet for Every One, Tech World.

Name of Reference Books:

1. Eric Ladd, Jim O'Donnel –"Using HTML 4, XML and JAVA"-Prentice Hall of India 1999.
2. "Beginning Java Script "– Paul Wilton – SPD Publications –2001.
3. Frontiers of Electronics of Commerce, Ravi kalakota & Andrew B. Whinston
4. Addison WesleyAdvance Java– Gajendra Gupta , firewall Media

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SEMESTER – VI

"Cellular and Mobile Computing"

Theory Periods: 30   Tutorials: "10"

Credits: 4   Code: IT 604

Unit – I

Introduction, issues in mobile computing, overview of wireless telephony: cellular concept, GSM: air-interface, hannel structure, location management: HLR-VLR, hierarchical, handoffs, channel allocation in cellular systems, CDMA, GPRS.

Unit - II

Wireless Networking, Wireless LAN Overview: MAC issues, IEEE 802.11, Blue Tooth, Wireless multiple access protocols, TCP over wireless, Wireless applications, data broadcasting, Mobile IP, WAP: Architecture, protocol stack, application environment, applications.

Unit – III

Data management issues, data replication for mobile computers, adaptive clustering for mobile wireless networks, File system, Disconnected operations.

Unit - IV

Mobile Agents computing, security and fault tolerance, transaction processing in mobile computing environment.

Unit – V

Ad Hoc networks, localization, MAC issues, Routing protocols, global state routing (GSR), Destination sequenced distance vector routing (DSDV), Dynamic source routing (DSR), Ad Hoc on demand distance vector routing (AODV), Temporary ordered routing algorithm (TORA), QoS in Ad Hoc Networks, applications.

Name of Text Books:
1. J. Schiller, Mobile Communications, Addison Wesley.
2. A. Mehrotra , GSM System Engineering.
3. M. V. D. Heijden, M. Taylor, Understanding WAP, Artech House.
4. Charles Perkins, Mobile IP, Addison Wesley.
5. Charles Perkins, Ad hoc Networks, Addison Wesley.

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SEMESTER – VI

"Software Engineering"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 605

UNIT I: SOFTWARE PROCESS
Introduction – Software life cycle models(waterfall, incremental, spiral, WINWIN Spiral, evolutionary, prototyping, object oriented, component based development). Software Development Process System – Verification and Validation, System engineering hierarchy, computer based system.

UNIT II: SOFTWARE REQUIREMENTS
Functional and non-functional requirements , user and system requirement, requirement engineering, process feasibility studies, elicitation and analysis, validation and management, software prototyping – prototyping in the software process , rapid prototyping techniques , user interface prototyping , SRS.

UNIT III: DESIGN CONCEPTS AND PRINCIPLES
Design process and concepts – modular design , design heuristic, design model and document. Architectural design- software architecture data design , architectural design transformation and transaction mapping. User interface design – user interface design principles, monitoring and control system. SCM – need for SCM, version control , introduction to SCM process , software configuration items.UML – components & features, Formal Technical Reviews(FTR), Configuration Audit.

UNIT IV: TESTING AND MAINTENANCE
Taxonomy of software testing – levels , test activities , types of s/w tests – black box testing , white box testing, testing boundary condition, structural testing, test coverage criteria. Based on data flow mechanisms – regression testing. s/w testing strategies – strategic approach and issues , unit testing, integration testing, validation testing, system testing and debugging,SQA, CMM software maintenance, Reengineering, Reverse Engineering, cyclomatic complexity, s/w quality metrics

UNIT V: INTRODUCTION TO SOFTWARE PROJECT MANAGEMENT
Measures and measurements – s/w complexity and size measure- data and logic structure measure information flow measure. Software cost estimation – function oriented models, COCOMO model, Delphi method, defining a task network, Scheduled Earned Value Analysis, Error Tracking, Software changes, program evolution dynamics software maintenance, Architectural evolution Taxonomy of CASE Tools. Recent trends and development in software engineering, challenges of software engineering in distributed and mobile system.

Name of Text Books:
1. Software Engineering – A practitioner's approach, Roger S. Pressman, McGraw-Hill international Edition, 5th
   edition , 2001
2. Object Oriented Modelling & Design, Remgaugh J. Blaha, M. Premeralant, W. Eddy F. and Lorsen W .(PHI)

Name of Reference Books:

1. Software engineering, Ian Sommervile, Person Education Aisa, 6th edition , 2000
2. An Integrated Approach to Software Engineering, Pankaj Jalote, Springer Verlag
3. Software Engineering – An Engineering Approach, James F. Peters and Witold Pedryez, Johan Wiley and Sons, New Delhi, 2000.
4. Sams teach urself UML in 24 hours , 3rd edition , Joseph Schmuller , 2004.

"Industrial Economics and Management"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 606

UNIT- I
Introduction: Nature and Significance of Economics .Meaning Of Science, Engineering and Technology and their relationship with economic development.

UNIT -II
Basic Concept: The Concept of Demand and Supply. Elasticity of Demand and Supply. Indifference Curve Analysis, Price Effect, Income Effect ,Substitution Effect.

UNIT -III
Money and Banking: Function of Money, Value of Money, Inflation and measures to control it, Brief Idea of functions of Banking Systems, Viz Commercial and Central Banking, Business Fluctuations.

UNIT- IV
Introduction to Management: Definition , Nature ,and Significance of Management, Evaluation of Management thought, Contributions of Max Weber, Taylor and Fayol.

UNIT- V
Human Behaviour: Factors of Individual Behaviour ,Perception ,Learning and Personality Development, Interpersonal Relationship and Group Behaviour.

Name of Text Books:

1. Dewett,K.K /Modern Economic Theory/S.Chand & Co.
2. Luthers Fred/Organizational Behaviour.
3. Prasad L.M/Principal of Management.

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SEMESTER – VI

"Advance Database Management Systems"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 607

UNIT - I: DISTRIBUTED DATABASE DESIGN
Design strategies, Distribution design issues, Fragmentation, Allocation, Oracle DDB design, Distributed database system architecture, Date's rule for DDBS.

UNIT - II: DATA REPLICATION & QUERY PROCESSING IN DDBS
Classification of replica control strategies, Consistency & Request ordering, The Gossip Architecture, Process groups & ISIS, Replication in Oracle, Query optimization in Centralized system, Objective of query processing, Query decomposition, Distributed query optimization algorithms, Query optimization in Oracle.

UNIT - III: TRANSACTION PROCESSING & RECOVERY
Centralized & client server architecture, server systems architectures, parallel & distributed systems, distributed data storage, Transaction property, distributed transactions, commit protocols, concurrency control in distributed database,availability ,heterogeneous distributed databases, Distributed deadlock management, recovery concepts, recovery techniques based on deferred update & on immediate update shadow paging, The ARIES Recovery
Algorithm, Recovery in multi-database systems, database backup and recovery from catastrophic failures, Reliability concept & measure, Site failure & network portioning, directory systems, Database recoveryin Oracle.

UNIT- IV: SECURITY MANAGEMENT & PL/SQL
Various aspect of database security, Basic model of database access control, TCSEC Policy identification, Security models, Identification-Authentication- Authorization, Statistical databases, Data encryption, Security in Oracle, JDBC, Purpose of PL/SQL, PL/SQL block, structure & type, PL/SQL syntax & programming.

UNIT - V: DIFFERENT DATABASES
Parallel databases: Introduction, I/O parallelism. Interquery-intraquery intraoperationinteroperation parallelism design of parallel systems. Client/Server DBS, Oracle DBMS, Distributed processing in Oracle, Oracle network protocols, Network administration in Oracle. Theory of OO databases, Multimedia databases, Real time databases.

Name of Text Books:
1. Database system concepts , 4th edition, Silberschatz-Korth-Sudarshan, MH.
2. Fundamentals of database systems 3rd edition, Elmasri & Navathe, Pearson education.

Name of Reference Books:
1. Database concepts & systems ,2nd edition , Ivan Bayross, SPD.
2. Database Management System, Rajesh Narang, PHI.
3. An Introduction to database systems, 7th edition, C.J. Date , Pearson education.

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SEMESTER – VI
"Advance Data Structures and Algorithm"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 608

Unit I
Algorithms, performance analysis-time complexity and space complexity,O-notation, Omega notation and Theta notation, Review of basic data structures - the list ADT, stack ADT, queue ADT, implementation using template classes in C++, sparse matrix representation.

Unit II
Dictionaries, linear list representation, skip list representation, operations- insertion, deletion and searching, hash table representation, hash functions, collision resolution-separate chaining, open addressing-linear probing, quadratic probing, double hashing, rehashing,extendible hashing, comparison of hashing and skip lists.

Unit III
Priority Queues – Definition, ADT, Realizing a Priority Queue using Heaps, Definition, insertion, Deletion, Application-Heap Sort, External Sorting- Model for external sorting, Multiway merge, Polyphase merge.

Unit IV
Search trees (part I) : Binary search trees, definition, ADT, implementation, operations-searching, insertion and deletion, Balanced search trees- AVL trees, definition, height of an AVL tree, representation, operations-insertion, deletion and searching.
Search trees (part II) : Introduction to Red –Black trees and Splay Trees, B-Trees-B-Tree of order m, height of a B-Tree, insertion, deletion and searching, Comparison of Search Trees.

Unit V
Divide and Conquer: General method, applications – Binary search, merge sort, quick sort, Strassen's matrix multiplication, Efficient non recursive tree traversal algorithms, Biconnected components. Disjoint set operations, union and find algorithms.

Greedy method and Dynamic programming: **General method (Greedy), Minimum cost spanning trees, Job sequencing with deadlines, General method (Dynamic Programming), Optimal binary search trees, 0/1 knapsack problem, Ordering Matrix Multiplications**

Name of Text Books:

1. Data Structures and Algorithm Analysis in C++, Mark Allen Weiss, Pearson Education, second edition.
2. Data structures, Algorithms and Applications in C++,S.Sahni,University press (India) pvt ltd, 2nd edition, Orient   Longman pvt.ltd.

Name of Reference Books:
1. Data structures and Algorithms in C++, Michael T.Goodrich, R.Tamassia and D.Mount, Seventh Edition, John Wiley.
2. Data Structures and Algorithms in C++, Third Edition, Adam Drozdek, Thomson.
3. Problem solving with C++, The OOP, Fourth edition, W.Savitch, Pearson education.
4. C++, The Complete Reference, 4th Edition, Herbert Schildt, TMH.
5. Data structures using C and C++, Langsam, Augenstein and Tanenbaum, PHI/Pearson Education.

"Multimedia and Virtual Reality"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 609

UNIT-I INTRODUCTION:
Concept of Non-Temporal and Temporal Media. Basic Characteristics of Non-Temporal Media; Images, Graphics, Text Basic Characteristics of Temporal Media: Video, Audio, Animation, Hypertext and Hypermedia.
Presentations: Synchronization, Events, Scripts and Interactivity, Introduction to Authoring Systems.

UNIT-II COMPRESSION TECHNIQUES:
Basic concepts of Compression. Still Image Compression.: JPEG Compression., Features of JPEG2000.
Video Compression: MPEG- 1&2 Compression Schemes, MPEG-4 Natural Video Compression.
Audio Compression: Introduction to speech and Audio Compression, MP3 Compression Scheme, Compression Of synthetic graphical objects.

UNIT-III MULTIMEDIA SYSTEMS ARCHITECTURE:
General Purpose Architecture for Multimedia Support: Introduction to Multimedia PC/Workstation Architecture, Characteristics of MMX instruction set, I/O systems: Overview of USB port and IEEE 1394 interface, Operating System Support for Multimedia Data: Resource Scheduling with real-time considerations, File System, I/O Device Management.

UNIT-IV MULTIMEDIA INFORMATION MANAGEMENT:
Multimedia Database Design, Content Based Information Retrieval: Image Retrieval, Video Retrieval, Overview of MPEG-7, Design of video-on-Demand Systems.

UNIT-V VIRTUAL REALITY:
Introduction to Virtual Reality and Virtual Reality Systems, Related Technologies: Tele-operation and Augmented Reality Systems Interface to the Virtual World-Input; Head and hand trackers, data globes, hap tic input devices. Interface to the Virtual World- Output, Stereo display, head-mounted display, auto stereoscopic displays, holographic displays, hap tic and force feedback, VRML Programming; Modeling objects and virtual environments Domain Dependent applications: Medical, Visualization, Entertainment, etc.

Name of Text Books:
   1. Multimedia Technology, TAY Vaughan, McGraw-Hill

Name of Reference Books:
   1. Multimedia Concept & Practice, Hartman & Carey, PHI
   2. Virtual Reality Systems, John Vince, Addison Wesley.

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SEMESTER – VI

"Neural Networks and Fuzzy Logic"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 610

UNIT-1 Introduction to Artificial Neural Networks:
Elementary Neurophysiology, Biological Neuron, Biological and Artificial Neuron Models, characteristics of ANN, Historical developments, Neural Networks viewed as directed graphs, Feedback from neurons to ANN, Artificial Intelligence and Neural Networks, McCulloch-Pitts Model, Network Architectures, Recurrent Networks, Topologies, overview of Single-layered Feed forward Networks and Multi-layered Feed- forward Networks.

UNIT-2 Learning and Training and Associated Memories
Classification Taxonomy of ANN, Different Learning strategy-Supervised and Unsupervised learning, Reinforcement, Learning rules, Memory models, Stability and Convergence, Activation and Synaptic Dynamics, Competitive, Error-Correction Learning, Associative Memory, Hebbian Learning, General concept of associated memory, Bidirectional Associated memory (BAM) architecture, BAM Training algorithm, Hopfield Network Architecture, Discrete and continuous versions, Storage and recall algorithm, stability analysis.

UNIT-3 A Survey of Neural Network Models:
Single-layered Feed Forward Neural Networks- Perceptron model– least mean square algorithm (Rosenblat Algorithm), ADALINE-algorithm and applications Multi-layered Feed Forward Neural Networks-Perceptron model – Backpropagation Algorithm, XOR – Problem, The generalized Delta rule, BPN Applications, MADALINE – Algorithm and applications, Self Organizing Feature map algorithm, Learning Vector Quantization, Counter Propagation Network.

UNIT-4 Applications:
Application and Architecture of Complex Pattern Recognition: ART/ART-1, ART-2, Cognitron – Structure & training, Neocognitron architecture – Data processing-performance – addition of lateral inhibition & feedback to the neocognitron, Character Recognition and Handwritten Digit recognition, Simulated Annealing, Support Vector machines.

UNIT-5 Neural Fuzzy Systems:
Introduction to classical sets-properties, Operations and relations ;Introduction to Fuzzy sets, membership, uncertainty, operations, relations, cardinalities, Examples of Fuzzy logic, Defuzzyfication to crisps sets and its methods, Fuzzy Associative memories, Fuzziness in neural networks and examples – Fuzzy logic control and fuzzy classification.

Name of Text Books:
1. Artificial Neural Networks by B. Yagna Narayan, PHI
2. Neural Networks Fuzzy Logic & Genetic Alogrithms by Rajshekaran & Pai, Prentice Hall
3. Principles of Soft Computing by S. N. Sivanandam, S. N. Deepa, Wiley-India.

4. Introduction to Neural Networks using Matlab 6.0 by S.N. Sivanandam, S Sumathi, S.N. Deepa, TMH.

Name of Reference Books:
1. Neural Networks by James A. Freeman and David M. Strapetuns, Prentice Hall,.
2. Neural Network & Fuzzy System by Bart Kosko, PHI.
3. Neural Network Design by Hagan Demuth Deale Vikas Publication House

"System Analysis and Design"

Theory Periods: 30   Tutorials: "10"
Credits: 4   Code: IT 611

UNIT I

Concepts of data and information, System Concepts, Components of a system, Characteristics of a system, Types of systems: closed systems, open systems, man made systems.

UNIT II

Information Systems, Types of information Systems: Transaction processing systems, Management information systems, Decision support systems, Expert systems. Computer based information systems (CBIS), Feasibility study.

UNIT III

Systems development life cycle model, Iterative waterfall model, Prototype model, Incremental model, Spiral model.

UNIT IV

Systems Analysis and Design, Classical and Structured approaches, Structured Analysis tools: DFD, Data dictionary, Decision tree etc., Systems Design, input/output design, Software Design and Documentation tools: HIPO and Warnier / Orr Diagrams.

UNIT V

System testing and quality assurance. System Implementation. HW/SW selection, Conversion, Software Maintenance. Activity network. CPM, PERT, Gantt Chart, Recent trend in systems analysis and design.

Name of Text Books:
  1. H. George, Valacich, *Modern Systems Analysis and Design*, Pearson, 2nd Ed, 2005.
  2. J. A. Senn, *Analysis and Design of Information Systems*, McGraw Hill, 1989.

Semester: VI	Code: IT 691
Subject: Compiler Design Lab	
Credits: 2	

List of 10 -15 Assignment/Practical will be allotted by the Instructor in the respective Lab.

Semester: VI	Code: IT 692
Subject: Web Technology Lab	
Credits: 2	

List of 10 -15 Assignment/Practical will be allotted by the Instructor in the respective Lab.

Semester: VI	Code: IT 693
Subject: Software Technology Lab	
Credits: 2	

List of 10 -15 Assignment/Practical will be allotted by the Instructor in the respective Lab.

Semester: VI	
Subject: I & E Skills	
Credits: 1	

List of 10 -15 Assignment/Practical will be allotted by the Instructor in the respective Lab.

Semester: VI	
Subject: Discipline	
Credits: 1	