VIII-Semester B. E. (Computer Technology)

Course Code: CT801
Title of the Course: Compiler Construction

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
04	01	--	05	04	03	10	10	80	100

Unit	Contents	Hours
I	Introduction to Compilor: Compilers and Translators, why to write compiler, The structure compiler, phases of compiler, Bookkeeping, Error detection and handling, compiler construction tools, Interpreter and the related issues, Cross compiler, Incremental compiler, Boot strapping, Lexical Analyzer(LEX), LEX specification details.	9
II	Syntax Analysis Introduction: Role of parsers & issues of separating lexical & syntax analysis, parsing technique: Top down parser, Problem with Top down parsing, Backtracking, Predictive parser: Recursive descent, LL(1) parser ,Bottom up parsing, LR parse (SLR, CLR & LALR etc), Implementation of LR parser. Automatic constructions of parser (YACC), YACC specification file details.	9
III	Intermediate code Generation: Syntax-directed translation schemes: Intermediate code, postfix notation, parse tree and syntax tree, Three address codes, quadruples, triples, translation of assignment statements, Boolean expression, Array references in arithmetic expression, procedure calls, Declaration, case statement.	9
IV	Symbol Tables: Contents, Data structure for symbol tables, representing scope information. Error detection and recovery: Error handling: Lexical-phase, Syntactic phase and semantic phase Code Generation Introduction: Issues in code generation, Target machine, Run-time storage management, Basic blocks and flow graphs, Next-use information, A simple code generator, Register allocation and assignment, The dag representation of basic blocks, Peephole optimization, Generating code from dags.	9
V	Code Optimization: Introduction, Principle sources Of Optimization, optimization of basic blocks, Loop in flow graphs, Introduction to global data flow analysis, Iterative solution of data-flow equations, code improving transformation.	9
	Total	45

Text Book/s:

1. Aho, A. V., R. Sethi and J. D. Ulman, Compiler principle, techniques and tools-, Addison wesley.
2. Aho&Ullman ,Principles of compiler Design.

Reference Book/s:

1. Lex and Yece-O'relly.
2. Dhamdhere.Compiler Construction , McMillan India
3. Compiler Design , A. A. Puntambekar
4. Muchnlk -Advanced compiler design & Implementation.

VIII-Semester B. E. (Computer Technology)

Course Code: CT802
Title of the Course: Data Warehousing and Datamining

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	03	03	10	10	80	100

Unit	Contents	Hours
I	**Data Warehousing**: Basic Concepts, Data Warehouse Design: Architecture, data marts, meta data repository, introduction to ETL process, Multidimensional data analysis, Data Warehouse Modeling: Data Cube, OLAP and OLAP operations, Different OLAP Servers, Data Warehouse Usage.	09
II	**Data Mining :** Need of data mining technique, Introduction to KDD process , A Multi-Dimensional View of Data Mining, Data Mining Functionalities Applications of data mining, classification of data mining techniques, Major Issues in Data Mining,	07
III	**Data objects and Preprocessing :**Data Objects and Attribute Types, Basic Statistical Descriptions of Data, Data Visualization Measuring Data Similarity and Dissimilarity. Data Preprocessing : Data Cleaning , Data Integration and Transformation, Data Reduction, Data Discretization and Concept Hierarchy Generation.	09
IV	**Classification and association rule mining** Classification basics, supervised Vs unsupervised learning, and Prediction. Issues Regarding Classification and Prediction. Classification by Decision Tree Introduction: what is decision tree? Algorithm for Decision Tree Induction, Attribute Selection Measure, Extracting Classification Rules from Trees, Approaches to Determine the Final Tree Size, Enhancements to basic decision tree induction. Association rule mining : Basics, Mining single-dimensional Boolean association rules from transactional databases, Mining multilevel association rules from transactional databases Mining multidimensional association rules from transactional databases and data warehouse.	11
V	**Cluster analysis** Cluster Analysis: Introduction, applications of clustering, examples of clustering, requirements of clustering in data mining, A Categorization of Major Clustering Methods – Partitioning Methods – Hierarchical methods – Density: Based Methods – Grid: Based Methods – Model: Based Clustering Methods – Clustering , Outlier Analysis.	09
	Total	45

Text Book/s:

1. Jiawei Han and MichelineKamber ―Data Mining Concepts and Techniques‖ Third Edition, Elsevier,
2. P.S.Deshpande, Chaudhary, " Multidimentional data analysis and datamining", DreamTech Press
3. Paul Raj Punniah – Data Warehousing Fundamentals fir IT professionals. Second edition, WIELLY, John-Wielly and sons.

Reference Book/s:

1. ArunK.Pujari, Data mining techniques , second edition,Universities Press.2010.
2. Pang N T.,Vipinkumar, Michel Steinbach, " Introduction to Data Mining", Pearson ,seventh print 2012
3. G. K. Gupta ―Introduction to Data Mining with Case Studies‖, Easter Economy Edition, Prentice Hall of India, 2006.

VIII-Semester B. E. (Computer Technology)

Course Code: CT803
Title of the Course: TCP /IP (Elective- III)

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	04	03	10	10	80	100

Unit	Contents	Hours
I	INTRODUCTION AND ADDRESSES: Introduction, The TCP/IP Architecture, protocol & layering, The Internet Protocol: IP Packet, IP Addressing, Subnet Addressing, IP Routing, Classless Inter-Domain Routing (CIDR), Address Resolution(ARP), Reverse Address Resolution(RARP), Internet Message Control Protols(ICMP) Error and Control Messages, Dynamic Host Configuration Protocol (DHCP), BOOTP; Domain Name System(DNS), NAT	9
II	NETWORK LAYER PROTOCOLS: Router functionality, Dynamic versus Static routing, Routing tables, Unicast routing: Routing Information Protocol (RIP), Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), Routing algorithms (link state, distance vector), Multicast Routing: Routing protocols (MOSPF, DVMRP, CBT, and PIM), MBONE, IGMP, End-to-end datagram delivery, and Flow control	9
III	TRANSPORT LAYER PROTOCOLS & NEXT GENERATION IP: Transmission Control Protocol (TCP): TCP Reliable Stream Service, TCP Operation, TCP Protocol, User Datagram Protocol (UDP), Stream Control Transmission Protocol (SCTP), IPv6, ICMPv6, Transitioning from IPv4 to IPv6.	9
IV	APPLICATION LAYER PROTOCOLS: Client-Server Interaction: The Client-Server Paradigm, The Socket Interface. Naming With The Domain Name System, Electronic Mail Representation And Transfer, File Transfer And Remote File Access, World Wide Web Pages And Browsing,	9
V	MULTIMEDIA INFORMATION & NETWORKING: Introduction to Digital Audio, Audio compression, Streaming Audio, Internet Radio, Voice over IP, Introduction to video, Video compression, Video on demand The Real time transport Protocol: RTP Scenarios and terminology, RTP Packet format, RTP Control Protocol(RTCP) Session control Protocols: Session initiation Protocol, H.323 Multimedia communication systems, Media Gateway Control Protocols	9
	Total	45

Text Book/s:

1. TCP/IP Protocol Suite, 4th Edition, by Behrouz A Forouzan (Tata Mcgraw Hill 2010).

Reference Book/s:

1. Internetworking with TCP/IP, Volume 1: Principles, Protocols, and Architecture, by Douglas Comer, 5th edition, Prentice Hall.
2. Computer Networking with Internet Protocols and Technology, 1/e -- © 2003 William Stallings
3. Communication networks, Leon-Gracia& Widjaja,2001, TMH
4. TCP/IP Illustrated, Volume 1 : The Protocols, 1/e -- © 2000, W. Richard Stevens, Person education
5. TCP/IP Illustrated, Volume 2 : The Implementation, 1/e -- © 1996, Gary R. Wright
6. An Engineering approach to computer networking, S. Keshav, Addison Wesley, 2001

VIII-Semester B. E. (Computer Technology)

Course Code: CT803
Title of the Course: E-Commerce (Elective-III)

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	04	03	10	10	80	100

Unit	Contents	Hours
I	Introduction to E-Commerce: Overview, Traditional vs. Electronic Business Transactions, Benefit of Electronic Commerce, Information Technology and Business, Internet structure and growth. Network infrastructure, other Networks.	9
II	EDI to E-Commerce: Electronic Data Interchange, The UN/EDIFACT Standard, The Internet and Extranet for E-Commerce, Identification and Tracking tools for Electronic Commerce. Transactions on the Internet, requirements of payment system. Types of electronic payment. Tools for implementation.	9
III	Security and E-Commerce: The benefit of Cryptography, The process of Encryption, The working of Public-key Cryptography, The importance of digital Certificates, The Comparison of encryption methods, An overview of Internet Security Systems.	9
IV	Consumer and Business Markets: Consumer Demographics, Loyalty and Acceptance, Value chain and the market place. Business evaluation on the internet.	9
V	Electronic Customer Support: The web response system and PPI, security and software modules, Submitting and tracking Online Problems, Dividing process to protect corporate Information. The Beginnings of a Virtual Factory: Virtual Co-ordination, Implementation CITIS operations Controlling Access to shared Data and applications. Entrusting access to an intermediatory.	9
	Total	45

Text Book/s:

1. Bajaj & Nag - E-Commerce the cutting edge of business.
2. David Kosiur - Understanding electronics Commerce.

VIII-Semester B. E. (Computer Technology)

Course Code: CT803
Title of the Course: Real Time Systems (Elective-III)

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	04	03	10	10	80	100

Unit	Contents	Hours
I	Introduction : Issues in real time systems and Structure. Hard versus soft real time systems: Jobs & processors, release times, deadlines, timing, constraints, Hard & Soft timing constraints, Hard real time systems , soft real time systems. A Reference model of Real-time systems : processors and resources, temporal parameters of real-time workload, periodic Task model, precedence constraints & data dependencies other types of dependencies, functional parameters, resource parameters of Jobs & parameters of resources, scheduling Hierarchy	9
II	Effective release times and deadlines, Optimality and non optimality of EDF & LST, Challenges in validating timing constraints in priority-driven systems, off-line versus on-line scheduling. Clock-driven scheduling, Priority driven scheduling of periodic tasks.	9
III	Scheduling aperiodic & sporadic jobs in priority-driven systems : Deferrable servers, Sporadic servers, Constant utilization, total bandwidth and weighted fair-queuing servers, scheduling of sporadic jobs. Resources and resource access control: assumption on resources and their usage, effects of resource contention & resource access control, non preemptive critical sections, basic priority-inheritance protocol, basic priority-ceiling protocol, stack-based priority-ceiling protocol, use of priority-ceiling protocol in dynamic-priority systems, preemption-ceiling protocol, controlling accesses to multiple unit resources.	9
IV	Model of multiprocessor & distributed systems, Task assignment, Multiprocessor priority-ceiling protocol, Elements of scheduling algorithms for end-to end periodic tasks, Scheduability of fixed priority end-to-end periodic tasks, end-to-end tasks in heterogeneous systems. Programming Languages and Tools : Desired language characteristics, Data typing, Control structures, Facilitating hierarchical decomposition , packages, Run time error handling, Overloading and generics, Multitasking, Low level programming, Task scheduling, Timing specifications, Programming environments, Run time support.	9
V	Real Time Databases : Introduction, Basic definitions, real time vs. general purpose databases, main memory databases, Transaction priorities, Transaction aborts, concurrency control issues, disk scheduling algorithms, maintaining serialization consistency, databases for hard real time systems. Real Time Communication: Introduction, Network Topologies, Contention based protocol, token based protocol, Stop and go protocol, Polled bus protocol, Hierarchical round robin protocol, Deadline based protocols, Fault tolerant routing.	9
	Total	45

Reference Book/s:

1. Jane W.S. Liu, “Real-Time Systems”, Pearson Education, 2000, ISBN NO: 81–7758–575-4.
2. Phillip A. Laplante, “Real-Time Systems Design and Analysis”, Prentice Hall of India, Second Edition, 2001, ISBN NO: 81-203-1684-3.
3. KrishnaC. M., Kang G. Shin, “Real-Time Systems”, McGraw-Hill International Edition. ISBN: 0-07-114243-6.

VIII-Semester B. E. (Computer Technology)

Course Code: CT803
Title of the Course: Soft Computing (Elective-III)

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	04	03	10	10	80	100

Unit	Contents	Hours
I	Soft Computing: Introduction, requirement, different tools and techniques.Fuzzy sets and Fuzzy logic: Introduction, Fuzzy sets versus crisp sets, operations on fuzzy sets, Extension principle, Fuzzy relations and relation equations, Fuzzy numbers, Linguistic variables, Fuzzy logic, Linguistic hedges, Applications, fuzzy controllers, fuzzy pattern recognition, fuzzy image processing, fuzzy database.	10
II	Artificial Neural Network: Introduction, basic models, Hebb's learning, Adaline, Perceptron, Multilayer feed forward network, Back propagation, Different issues regarding convergence of Multilayer Perceptron, Competitive learning, Self-Organizing Feature Maps, Adaptive Resonance Theory, Associative Memories, Applications.	9
III	Evolutionary and Stochastic techniques: Genetic Algorithm (GA), different operators of GA, analysis of selection operations, Hypothesis of building blocks, Schema theorem and convergence of Genetic Algorithm, Simulated annealing and Stochastic models, Boltzmann Machine, Applications.	9
IV	Rough Set: Introduction, Imprecise Categories Approximations and Rough Sets, Reduction of Knowledge, Decision Tables, and Applications.	8
V	Hybrid Systems: Neural-Network-Based Fuzzy Systems, Fuzzy Logic-Based Neural Networks, Genetic Algorithm for Neural Network Design and Learning, Fuzzy Logic and Genetic Algorithm for Optimization, Applications.	9
	Total	45

Reference Book/s:

1. Neural Fuzzy Systems, Chin-Teng Lin & C. S. George Lee, Prentice Hall PTR.
2. Fuzzy Sets and Fuzzy Logic, Klir& Yuan, PHI, 1997.
3. Neural Networks, S. Haykin, Pearson Education, 2ed, 2001.
4. Genetic Algorithms in Search and Optimization, and Machine Learning, D. E. Goldberg, Addison-Wesley, 1989.
5. Neural Networks, Fuzzy logic, and Genetic Algorithms, S. Rajasekaran& G. A. V. Pai, PHI.
6. Neuro-Fuzzy and Soft Computing, Jang, Sun, &Mizutani, PHI.
7. Learning and Soft Computing, V. Kecman, MIT Press, 2001.
8. Rough Sets, Z. Pawlak, Kluwer Academic Publisher, 1991.
9. Intelligent Hybrid Systems, D. Ruan, Kluwer Academic Publisher, 1997.

VIII-Semester B. E. (Computer Technology)

Course Code: CT804
Title of the Course: Object Oriented Database Systems (Elective-IV)

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	04	03	10	10	80	100

Unit	Contents	Hours
I	Overview of Object Oriented Concepts:Need for Object Oriented Programming: Procedural Languages, The Object Oriented Approach, Advantages of Object Oriented Programming. Characteristics of Object Oriented Languages: Objects, Classes, Inheritance, Reusability, New Data Types, Polymorphism and Over Loading.	9
II	Object Oriented Analysis and Design:Object Structure Concepts: Object Type : Object or User Defined Types, Object Identifiers. Attribute Types (Literal Multimedia), Relationships, Object Behavioural Concepts. Methodology for Object Oriented Design :BoochMethodology, Chen and Chen Methodology, Collections and Aggregates, Composite Objects, Object clustering, Integrity Constraints and . Use, Instance Operations Extensibility class or Type Operations Extensibility. Design Modelling, System Design Life Cycle: Model Type, Iteration Hierarchy, Packaging Strategy, Check Pointing Strategy.	9
III	Overview of Advanced Database Technology:Traditional Database Models and SQL: Limitations of Relational Model- Need for Object Orientation; Conceptual Database Design: ANSISPARC 3 Level Architecture; Logical Database Design and Physical Database Design - Overview. Transaction Processing: Types of Failures of Applications, Definition of Transaction Schedules and Recoverability, Serialisabllity of Schedules, Levels of Transaction Consistency, Deadlocks, Nested Transaction, Long Duration Transactions, Transaction Performance, Transaction Bench Marking, Transaction as implemented in Contemporary Database Management Systems.	9
IV	Distributed Databases: Motivation for Distributed Databases, Distributed Databases Concepts, Types of Distribution, Architecture of Distributed Databases, Design of Distributed Databases, Distributed Query Processing, Recovery in Distributed Systems, Commit Protocols for Distributed Databases, Multi-Database Systems, Federated Databases, Asynchronous Replication Concepts; Distributed Database Features in Contemporary Database management Systems. Emerging Database Trends: Object-Oriented Databases, Active Databases. Deductive Databases, Concepts of Next Generation Databases, Data Warehouses, Online Analytical Processing (OLAP) and Executive Information Systems, Graphic User Interfaces (as COGNOS), Data Mining, Parallel Query Processing; multi-media databases.	9
V	Object Oriented Database Systems (including Object Relational Database Systems): Relational vs Object Oriented Database Systems: Semantic Database Systems, Object Hierarchies - Generalization, Specialization, Aggregation, E-R model, RMT, SDM, SAM, Daplex, IFO. The architecture of Object Oriented Databases, Query Languages for 00 Databases, GemstoneO2OrionObjectstone, Object Relational Database Management System (ORDBMS) - Oracle 8i, 9i, DB2. Distributed Object Oriented Systems Standards (OMG and CORBO) Object Management Group (OMG), ODMG Compliance, CORBA.	09
	Total	45

Text Book/s:

1. CSR Prabhu: "Object Oriented Databases Systems:Approaches and Architecture"(1999),Prentice Hall of India.
2. K.V.Witt: "Introduction to Object Oriented Programming",Galgotia Publication.

Reference Book/s:

1. R.Cattel: "Object Data management",(1993),Addison-Wesley.
2. W.Kim: "Modern Database Systems",(1995),ACM Press,Addision-Wesely.

VIII-Semester B. E. (Computer Technology)

Course Code: CT804
Title of the Course: Open Source Softwares (Elective-IV)

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	04	03	10	10	80	100

Unit	Contents	Hours
I	Overview of Free/Open Source Software-- Definition of FOSS & GNU, History of GNU/Linux and the Free Software Movement , Advantages of Free Software and GNU/Linux, FOSS usage , trends and potential—global and Indian.GNU/Linux OS installation-- detect hardware, configure disk partitions & file systems and install a GNU/Linux distribution ; Basic shell commands - logging in, listing files, editing files, copying/moving files, viewing file contents, changing file modes and permissions, process management ; User and group management, file ownerships and permissions, PAM authentication ; Introduction to common system configuration files & log files ; Configuring networking, basics of TCP/IP networking and routing, connecting to the Internet (through dialup, DSL, Ethernet, leased line).	09
II	Configuring additional hardware - sound cards, displays & display cards, network cards, modems, USB drives, CD writers ; Understanding the OS boot up process; Performing every day tasks using gnu/Linux -- accessing the Internet, playing music, editing documents and 09spreadsheets, sending and receiving email, copy files from disks and over the network, playing games, writing CDs ; X Window system configuration and utilities -- configure X windows, detect display devices ; Installing software – from source code as well as using binary packages. Setting up email servers-- using postfix (SMTP services), courier (IMAP & POP3 services), squirrel mail (web mail services) ; Setting up web servers -- using apache (HTTP services), php (server-side scripting), perl (CGI support) ; Setting up file services -- using samba (file and authentication services for windows networks), using NFS (file services for gnu/Linux / Unix networks) ; Setting up proxy services -- using squid (http / ftp / https proxy services) ; Setting up printer services - using CUPS (print spooler), foomatic (printer database)	09
III	Setting up a firewall - Using netfilter and ip tables; Using the GNU Compiler Collection – GNU compiler tools ; the C preprocessor (cpp), the C compiler (gcc) and the C++ compiler (g++), assembler (gas) ; Understanding build systems -- constructing make files and using make, using autoconf and autogen to automatically generate make files tailored for different development environments ; Using source code versioning and management tools -- using CVS to manage source code revisions, patch & diff.	09
IV	Understanding the GNU Libc libraries and linker -- linking against object archives (.a libraries) and dynamic shared object libraries (.so libraries), generating statically linked binaries and libraries, generating dynamically linked libraries ; Using the GNU debugging tools -- gdb to debug programs, graphical debuggers like ddd, memory debugging / profiling libraries mpatrol and valgrind ; Review of common programming practices and guidelines for GNU/Linux and FOSS ; Introduction to Bash, sed&awk scripting. Basics of the X Windows server architecture.	09
V	Basics of the X Windows server architecture ; Qt Programming ; Gtk+ Programming ; Python Programming ; Programming GUI applications with localization support.	09
	Total	45

Reference Book/s:

1. N. B. Venkateshwarlu (Ed); Introduction to Linux: Installation and Programming, B S Publishers; 2005.
2. Matt Welsh, Matthias KalleDalheimer, Terry Dawson, and Lar Kaufman, Running Linux, Fourth Edition, O'Reilly Publishers, 2002.
3. Carla Schroder, Linux Cookbook, First Edition, O'Reilly Cookbooks Series, 2004 On-line material
4. Open Sources: Voices from the Open Source Revolution, First Edition, January 1999, ISBN: 1-56592-582-3. URL:http://www.oreilly.com/catalog/opensources/book/toc.html
5. The Linux Cookbook: Tips and Techniques for Everyday Use, First Edition Michael Stutz, 2001. URL: http://dsl.org/cookbook/cookbook_toc.html
6. The Linux System Administrators' Guide, Lars Wirzenius, Joanna Oja, Stephen Stafford, and Alex Weeks, December 2003. URL: http://www.tldp.org/guides.html
7. Using GCC, Richard Stallman et al. URL: http://www.gnu.org/doc/using.html
8. An Introduction to GCC, Brian Gough. URL: http://www.networktheory.co.uk/docs/gccintro/GNU Autoconf, Automake and Libtool, Gary V. Vaughan, Ben Elliston, Tom Tromey and Ian Lance Taylor. URL: http://sources.redhat.com/autobook/
9. Open Source Development with CVS, Third Edition, Karl Fogel and Moshe Bar.URL: http://cvsbook.red-bean.com/
10. Advanced Bash Scripting Guide, Mendel Cooper, June 2005. URL:http://www.tldp.org/guides.html
11. GTK+/GNOME Application Development, Havoc Pennington. URL:http://developer.gnome.org/doc/GGAD
12. Python Tutorial, Guido van Rossum, Fred L. Drake, Jr., Editor. URL: http://www.python.org/doc/current/tut/tut.htm

VIII-Semester B. E. (Computer Technology)

Course Code: CT804
Title of the Course: Mobile Computing (Elective-IV)

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	04	03	10	10	80	100

Unit	Contents	Hours
I	Introduction to Mobile Communications and Computing: Mobile Computing (MC): Introduction to MC, novel applications, limitations, and architecture GSM: Mobile services, System architecture, Radio interface, Protocols, Localization and calling, Handover, Security, and New data services.	9
II	(Wireless) Medium Access Control: Motivation for a specialized MAC (Hidden and exposed terminals, Near and far terminals), SDMA, FDMA, TDMA, CDMA. Mobile Network Layer:Mobile IP (Goals, assumptions, entities and terminology, IP packet delivery, agent advertisement and discovery, registration, tunneling and encapsulation, optimizations), Dynamic Host Configuration Protocol (DHCP).	9
III	Mobile Transport Layer: Traditional TCP, Indirect TCP, Snooping TCP, Mobile TCP, Fast retransmit/fast recovery, Transmission /time-out freezing, Selective retransmission, Transaction oriented TCP. Database Issues: Hoarding techniques, caching invalidation mechanisms, client server computing with adaptation, power-aware and context-aware computing, transactional models,query processing, recovery, and quality of service issues.	9
IV	Data Dissemination: Communications asymmetry, classification of new data delivery mechanisms, push-based mechanisms, pull-based mechanisms, hybrid mechanisms, selective tuning (indexing) techniques. Mobile Ad hoc Networks (MANETs): Overview, Properties of a MANET, spectrum of MANETapplications, routing and various routing algorithms, security in MANETs.	9
V	Protocols and Tools: Wireless Application Protocol-WAP. (Introduction, protocol architecture, and treatment of protocols of all layers), Bluetooth (User scenarios, physical layer, MAC layer, networking, security, link management) and J2ME.	9
	Total	45

Text Book/s:

1. Jochen Schiller, "Mobile Communications", Addison-Wesley. (Chapters 4, 7, 9,10, 11), second edition, 2004.
2. Stojmenovic and Cacute, "Handbook of Wireless Networks and Mobile Computing", Wiley, 2002, ISBN 0471419028. (Chapters 11, 15, 17, 26 and 27)

Reference Book/s:

1. Reza Behravanfar, "Mobile Computing Principles: Designing and Developing Mobile Applications with UML and XML", ISBN: 0521817331, Cambridge University Press, October2004
2. Adelstein, Frank, Gupta, Sandeep KS, Richard III, Golden , Schwiebert, Loren, "Fundamentals of Mobile and Pervasive Computing", ISBN: 0071412379, McGraw-Hill Professional, 2005.
3. Hansmann, Merk, Nicklous, Stober, "Principles of Mobile Computing", Springer, second edition, 2003.
4. MartynMallick, "Mobile and Wireless Design Essentials", Wiley DreamTech, 2003

VIII-Semester B. E. (Computer Technology)

Course Code: CT804
Title of the Course: Cloud Computing (Elective-IV)

Course Scheme					Evaluation Scheme (Theory)				
Lecture	Tutorial	Practical	Periods/week	Credits	Duration of paper, hrs	MSE	IE	ESE	Total
03	01	--	04	04	03	10	10	80	100

Unit	Contents	Hours
I	INTRODUCTION: Cloud Computing Introduction, Form, Collaboration to cloud, Working of cloud computing, pros and cons, benefits, developing cloud computing services, Cloud service development, discovering cloud services.	09
II	CLOUD COMPUTING FOR EVERYONE: Centralizing email communications, cloud computing for community, collaborating on schedules, collaborating on group projects and events, cloud computing for corporation, mapping schedulesm managing projects, presenting on road.	09
III	USING CLOUD SERVICES: Collaborating on calendars, Schedules and task management, exploring on line scheduling and planning, collaborating on event management, collaborating on contact management, collaborating on project management, collaborating on word processing, spreadsheets, and databases.	09
IV	OUTSIDE THE CLOUD: Evaluating web mail services, Evaluating instant messaging, Evaluating web conference tools, creating groups on social networks, Evaluating on line groupware, collaborating via blogs and wikis	09
V	STORING AND SHARING: Understanding cloud storage, evaluating on line file storage, exploring on line book marking services, exploring on line photo editing applications, exploring photo sharing communities, controlling it with web based desktops.	09
	Total	45

Text Book/s:

1. Enterprise Cloud Computing by Gautam Shroff,Cambridge
2. Michael Miller, " Cloud Computing", Pearson Education, New Delhi, 2009

Reference Book/s:

1. Google Apps by Scott Granneman Pearson
2. Cloud Security & Privacy by Tim Malhar, S. Kumaraswammy, S. Latif (SPD 'O'-REILLY)
3. Cloud Computing: A Practical Approach, Antohy T Velte, et.al McGraw Hill
4. Cloud Computing Bible by Barrie Sosinsky, Wiley India
5. Stefano Ferretti et.al. QoS aware Clouds", 2010 IEEE 3rd International Conference on Cloud Computing

VII-Semester B. E. (Computer Technology)

Course Code: CT805
Title of the Course: Compiler Construction

Course Scheme					Evaluation Scheme (Laboratory)		
Lecture	Tutorial	Practical	Periods/week	Credits	TW	POE	Total
--	--	01	03	02	25	25	50

	List of Practicals
	The student is expected to perform practicalsbased on following topics.
I	Practical no. 1 , 2 & 3 should be based on the Lex
II	Practical no. 4 should be based on Flex.
III	Practical no. 5,6,7 & 8 should be based on Yacc to recognize arithmetic expression, Strings, valid variable ,grammar
IV	Practical no. 9 & 10 should be based on Yacc to evaluate arithmetic expression

VII-Semester B. E. (Computer Technology)

Course Code: CT806
Title of the Course: Data Warehousing and Datamining

Course Scheme					Evaluation Scheme (Laboratory)		
Lecture	Tutorial	Practical	Periods/week	Credits	TW	POE	Total
--	--	01	03	02	25	25	50

	List of Practicals
	Practical's of Data warehousing and data mining shall be based on syllabus. Two practical assignments can be planned from each unit. Softwares like Oracle, MatLab and open source tools like Weka can be used for implementation of assignments. There can be 8-10 practical assignments.
I	Practical 1 and 2 will be on unit I (Data Warehousing)
II	Practical 3 will be on unit II (Study of Open source tools like Weka)
III	Practical 4, 5 and 6 will be on unit III (Study of any data set, Data similarity dissimilarity, statistical analysis of data.)
IV	Practical 7 and 8 will be on unit IV (Classification algorithm and association rule mining algorithm)
V	Practical 9 and 10 will be on unit V (clustering algorithms)

VIII-Semester B. E. (Computer Technology)

Course Code: CT807
Title of the Course: Project

Course Scheme					Evaluation Scheme (Laboratory)		
Lecture	Tutorial	Practical	Periods/week	Credits	TW	POE	Total
--	--	01	06	06	75	75	150

Project Work
As the project topic has already chosen in Seventh Semester under Project Seminar, The Student is expected to carry out the following- 1. Literature Review related to proposed topic 2. Formulation of Scope & Methodology for the proposed study. 3. Implementation of project work 4. Carry out necessary experiments for analysis and testing of the project work On completion of above mentioned activities of project work, the given student has to prepare a project report in the specified format and deliver a seminar on project work before final submission. Evaluation of project work will be on the basis of quality of work carried out, submitted Report, Seminar & Viva-Voce.