

**ITC-701**  
**SOFT COMPUTING**

**UNIT-I**

**Soft Computing:** Introduction of soft computing, soft computing vs. hard computing, various types of soft computing techniques, applications of soft computing.

**Introduction to Neural Network:** Concept, biological neural network, evolution of artificial neural network, McCulloch-Pitts neuron models, Learning (Supervised & Unsupervised) and activation function, Models of ANN-Feed forward network and feedback network, Learning Rules Hebbian, Delta, Perceptron Learning and Widrow-Hoff, winner take all.

**UNIT – II**

**Supervised Learning:** Perceptron learning,- Single layer/multilayer, linear Separability, Adaline, Madaline, Back propagation network, RBFN. Application of Neural network in forecasting, data compression and image compression.

**UNIT – III**

**Unsupervised learning:** Kohonen SOM (Theory, Architecture, Flow Chart, Training Algorithm) Counter Propagation (Theory, Full Counter Propagation NET and Forward only counter propagation net), ART (Theory, ART1, ART2). Application of Neural networks in pattern and face recognition, intrusion detection, robotic vision.

**UNIT – IV**

**Fuzzy Set:** Basic Definition and Terminology, Set-theoretic Operations, Member Function, Formulation and Parameterization, Fuzzy rules and fuzzy Reasoning, Extension Principle and Fuzzy Relations, Fuzzy if-then Rules, Fuzzy Inference Systems. Hybrid system including neuro fuzzy hybrid, neuro genetic hybrid and fuzzy genetic hybrid, fuzzy logic controlled GA. Application of Fuzzy logic in solving engineering problems.

**UNIT – V**

**Genetic Algorithm:** Introduction to GA, Simple Genetic Algorithm, terminology and operators of GA (individual, gene, fitness, population, data structure, encoding, selection, crossover, mutation, convergence criteria). Reasons for working of GA and Schema theorem, GA optimization problems including JSP (Job shop scheduling problem), TSP (Travelling salesman problem), Network design routing, timetabling problem. GA implementation using MATLAB.

**REFERENCES:-**

1. S.N. Shivnandam, "Principle of soft computing", Wiley
2. Rich E and Knight K, Artificial Intelligence, TMH, New Delhi.
3. Klir & Yuan, Fuzzy sets & Fuzzy Logic: Theory & Appli., PHI Pub.
4. S, Rajasekaran & G.A. Vijayalakshmi Pai, Neural Networks, Fuzzy Logic & Genetic Algorithms, Synthesis & applications, PHI Publication.

**LIST OF EXPERIMENTS**

1. Form a Perceptron Net for basic gates with binary input and output
2. Using ADALINE Net, generate XOR function with bipolar inputs and targets
3. To Study the ADALINE NET and their training algorithm
4. To study the MADALINE NET and their training algorithm
5. Learn pattern, target output, learning rate and activation function
6. Obtain the output of the neuron Y for the network shown in fig: Using activation function as: a | binary sigmoidal b | binary sigmoidal  $[x_1 \ x_2 \ x_3] = [0.8 \ 0.6 \ 0.4]$   $[y_1 \ y_2 \ y_3] = [0.1 \ 0.3 \ -0.2]$   
 $b=0.35$
7. To implement AND function using Mc-Culloch Pitts neuron model
8. Design fuzzy inference system for a given problem
9. Implement Travelling salesman problem using Genetic algorithm
10. To study the training algorithm of ART

**IT - 702-  
CLOUD COMPUTING**

**UNIT-I**

Introduction, Cloud computing history, Cloud architecture, Characteristics of cloud computing as per NIST, Cloud services requirements, System Models for Distributed and Cloud Computing, NIST Cloud Computing Reference Architecture, Applications, ECG Analysis in the cloud, Protein structure prediction, Gene Expression Data Analysis, Satellite Image Processing, CRM and ERP, Social networking.

**UNIT-II**

Cloud Reference Model, Types of Clouds, Cloud Interoperability & Standards, Scalability and Fault Tolerance, Design Challenges, Inter Cloud Resource Management, Resource Provisioning and Platform Deployment, Global Exchange of Cloud Resources, Cloud services (IaaS, PaaS & SaaS).

**UNIT-III**

Basics of Virtualization, Types of Virtualization, Implementation Levels of Virtualization, Virtualization Structures, Tools and Mechanisms - Virtualization of CPU, Memory, I/O Devices, Virtual Clusters and Resource management, Virtualization for Data-center Automation, Virtual LAN (VLAN) and Virtual SAN (VSAN) and their benefits.

**UNIT-IV**

Cloud Security:- Security Overview Infrastructure security, Data security and storage, Network security – I , Network security – II, Host security, Disaster recovery and management, Cloud Information security fundamentals, Cloud security services, Design principles, Secure Cloud Software Requirements, Policy Implementation, Cloud Computing Security Challenges, Virtualization security Management, Cloud Computing Security Architecture.

**UNIT-V**

Cloud Solutions: - Cloud Ecosystem, Cloud Business Process Management, Cloud Service Management Third Party Cloud Services, Market Based Management of Clouds. Case study: - Amazon cloud services, Amazon EC2, Amazon S3, Google cloud services, Google Map reduce, GFS, Sales Force, Windows Azure- EMC cloud services, IBM cloud services, Apache Hadoop.

**REFERENCES:**

1. Kenneth Hess, Amy New Man – Practical Virtualization Solutions – Prentice Hall, 2010
2. Shahed Latif, Tim Mather, Subra Kumara swamy – Cloud Security and Privacy : An Enterprise perspective on risks and compliance – O'Reilly Media Inc., 2009
3. Gautam Shroff – Enterprise Cloud Computing: Technology, Architecture, Applications – Cambridge Press, 2010

**LIST OF EXPERIMENTS**

1. Creating and working with a new document in Google docs.
2. Preparing a presentation of ten slides on using Google docs.
3. Setting up service for running Hadoop daemons on windows 7
4. Create and Deploy a Cloud Service.
5. Study of Eucalyptus.
6. Installation of Eucalyptus Cloud.
7. Study of Cloudsim.
8. CloudSim setup and installation.
9. Working and installation of Google App Engine.

**ITC- 703**

**Object Oriented Analysis and Design**

**UNIT-I**

Overview of Object Oriented concepts: Objects and classes, abstraction, generalization and inheritance, encapsulation, multiple inheritance, aggregation abstraction classes, polymorphism, link and association, Need for object oriented approach

**UNIT II**

System design life cycle, object oriented S/W development process model, Object Oriented Analysis, Object Modeling Technique (OMT): object model, function model, relationship among models, object diagrams, state diagrams, data flow diagrams, analysis.

**UNIT III**

Object oriented Design: Overview of object design, Combination the models, Designing algorithms, design optimization, Implementation of control, Adjustment, Design of association, object representation, physical packaging, documenting design decision, comparison of use-case driven approach.

**UNIT IV**

Translation Object Oriented design into implementation, Programming style, Documentation, characterization of object oriented languages, Comparison of object oriented language like C++, JAVA, object programming.

**UNIT V**

Unified Modeling Language (UML): Class diagram sequence diagram Use case diagram, Collaboration, diagram, state, chart diagram, Activity diagram, component diagram, deployment diagram, Object oriented Database: Relational Vs object oriented database, the architecture of object oriented database, query language for Object Oriented database.

**REFERENCES:**

1. Satzinger, Jackson and Burd, "Object oriented Analysis and design with the Unified Process", CENGAGE Learning.
2. Michael Blaha and J. Rumbaugh, "Object oriented Modeling and design with UML", Pearson Education
3. O'Docherty, "Object Oriented Analysis and Design Understanding, System Development with UML2.0", Wiley India.

**List of Experiment:-**

1. Draw Object, state, Data flow Diagram of ATM.
2. Draw Object, state, Data flow Diagram of Telephone Call.
3. Draw Object, state, Data flow Diagram of Library Information System.
4. Draw Object, state, Data flow Diagram of Airline reservation System.
5. Draw Object, state, Data flow Diagram of Calculator. Draw Object, state, Data flow Diagram of College Management system.
6. Draw Object, state, Data flow Diagram of Payroll System. Draw Object, state, Data flow Diagram of Railway Reservation system. Draw Object, state, Data flow Diagram of Online Sales.
7. Draw Object, state, Data flow Diagram of Examination result display System of a University.

**ITC-704(A)**

**Cryptography & Information Security**

**UNIT I**

E-security & Cryptography Threats, risks, consequences, Sources of threats, Attacks classification, Preventive measures, remedial measures. Stream ciphers vs. block ciphers, Keys and key management Key exchange (peer to peer, peer - keyserver - peer) Diffie Helman key sharing scheme Symmetric key cryptography vs asymmetric key cryptography Trapdoor functions

**UNIT II**

Hash digests: Properties of cryptographic hash functions, Merkle Damgard construction, md family, sha family, Digital signatures, sha3

**UNIT III**

GPG: Overview of GPG Commands and CLI , GPG trust model, GUI – KGPG, Seahorse Frontends – Kleopatra, enigmail.

**UNIT VI**

Block ciphers: Block cipher principles, Feistel networks, S boxes and P boxes, Block cipher modes of operation, DES , 3DES, AES.

**UNIT V**

Elementary number theory: Prime numbers, Factoring,, Modular arithmetic, Fermat's & Euler's theorems, GCD, Euclid's algorithm, Discrete logarithm problem, Public key crypto systems, RSA algorithm, Elliptic Curve cryptography

**REFERENCE BOOKS**

1. William Stallings, *Cryptography and network security*, Pearson Educa- tion.
2. Alfred J. Menezes, Paul C. van Oorschot and Scott A. Vanstone , *Hand- book of Applied Cryptography*, CRC Press.
3. Margaret Cozzens, Steven J Miller, *The mathematics of encryption*, American Mathematical Society
4. Bruce Schneier *Applied Cryptography*, John Wiley and Sons
5. Mark Stamp, *Information Security: Principles and Practice*, John Wi- ley and Sons
6. Matt Bishop, *Computer Security, Art and Science*, Pearson Education

**ITC-704(B)**

**Simulation and Modeling**

**Unit-I**

**Introduction to Modeling and Simulation**

Nature of Simulation. Systems , Models and Simulation, Continuous and Discrete Systems, system modeling, concept of simulation, Components of a simulation study, Principles used in modeling Static and Dynamic physical models, Static and Dynamic Mathematical models Introduction to Static and Dynamic System simulation , Advantages ,Disadvantages and pitfalls of Simulation.

**Unit-II**

**System Simulation and Continuous System Simulation**

Types of System Simulation, Monte Carlo Method, Comparison of analytical and Simulation methods, Numerical Computation techniques for Continuous and Discrete Models, Distributed Lag Models, Cobweb Model. Continuous System models, Analog and Hybrid computers, Digital- Analog Simulators, Continuous system simulation languages ,Hybrid simulation ,Real Time simulations.

**Unit –III**

**System Dynamics & Probability concepts in Simulation**

Exponential growth and decay models, logistic curves ,Generalization of growth models , System dynamics diagrams, Multi segment models , Representation of Time Delays. Discrete and Continuous probability functions, Continuous Uniformly Distributed Random Numbers, Generation of a Random numbers, Generating Discrete distributions, Non-Uniform Continuously Distributed Random Numbers, Rejection Method.

**Unit-IV**

**Simulation of Queueing Systems and Discrete System Simulation**

Poisson arrival patterns, Exponential distribution, Service times, Normal Distribution Queueing Disciplines, Simulation of single and two server queue. Application of queueing theory in computer system. Discrete Events ,Generation of arrival patterns, Simulation programming tasks, Gathering statistics, Measuring occupancy and Utilization, Recording Distributions and Transit times .

**Unit-V**

**Introduction to Simulation languages and Analysis of Simulation output**

GPSS: Action times, Succession of events, Choice of paths, Conditional transfers, program control statements . SIMSCRIPT: Organization of SIMSCRIPT Program, Names & Labels, SIMSCRIPT statements . Estimation methods , Relication of Runs, Batch Means , Regenerative techniques , Time Series Analysis , Spectral Analysis and Autoregressive Processes.

**REFERENCES BOOKS:**

1. Gorden G., System simulation, Prentice Hall.
2. Seila, Simulation Modeling, Cengage Learning
3. Law .,Simulation Modeling And Analysis, McGraw Hill
4. Deo, System Simulation with Digital Computer, PHI
5. Harrington, Simulation Modeling methods, McGraw Hill
6. Severance, “ System Modeling & Simulation, Willey Pub
7. Working in Cloud to demonstrate different language.

**ITC-704(C)**  
**ADHOC NETWORK**

**UNIT I**

Introduction:- Introduction-Fundamentals of Wireless Communication Technology, The Electromagnetic Spectrum, GSM, GPRS, PCS, WLAN and UMTS, Components of Packet Radios, Routing in PRNETs, Ad Hoc Wireless Networks, Wireless Sensor Networks, Traffic Profiles, Types of Ad Hoc Mobile Communications, Types of Mobile Host Movements, Challenges Facing Ad Hoc Mobile Networks.

**UNIT II**

Ad Hoc wireless MAC protocols:- Introduction, Synchronous and asynchronous MAC protocols, Problem in Ad Hoc channel access, Receiver-initiated and sender-initiated MAC protocols, Existing Ad Hoc MAC protocols, Ad Hoc Routing Protocols- Introduction, Classifications of Routing Protocols: Table-Driven Routing Protocols – Destination Sequenced Distance Vector (DSDV), Wireless Routing Protocol (WRP), Source-Initiated On-Demand Approaches - Ad Hoc On-Demand Distance Vector Routing (AODV), Dynamic Source Routing (DSR), Temporally Ordered Routing Algorithm (TORA), Signal Stability Routing (SSR) Location Aided Routing (LAR).

**UNIT III**

Multicast routing In Ad Hoc Networks:- Introduction, Issues in Designing a Multicast Routing Protocol, Operation of Multicast Routing Protocols, An Architecture Reference Model for Multicast Routing Protocols, Classifications of Multicast Routing Protocols, Tree-Based Multicast Routing Protocols, Mesh- Based Multicast Routing Protocols, Summary of Tree-and Mesh-Based Protocols - Energy-Efficient Multicasting.

**UNIT IV**

Transport Layer, Security Protocols:- Introduction, Issues in Designing a Transport Layer Protocol for Ad Hoc Wireless Networks, Design Goals of a Transport Layer Protocol for Ad Hoc Wireless Networks, Classification of Transport Layer Solutions, TCP Over Ad Hoc Wireless Networks, Network Security Requirements, Issues and Challenges in Security Provisioning, Network Security Attacks, Key Management.

**UNIT V**

QoS and Energy Management: -Introduction, Issues and Challenges in Providing QoS in Ad Hoc Wireless Networks, Classifications of QoS Solutions, MAC Layer Solutions, Network Layer Solutions, Energy Management in Ad Hoc Wireless Networks – Introduction, Need for Energy Management in Ad Hoc Wireless Networks, Classification of Energy Management Schemes.

**REFERENCES BOOKS:-**

1. C. Siva Ram Murthy and B.S. Manoj “Ad Hoc Wireless Networks: Architectures and Protocols”, Pearson Education.
2. C.K. Toh, “Ad Hoc Mobile Wireless Networks: Protocols and Systems”, Pearson Education.



**ITC-705(A)**

**DATA MINING AND KNOWLEDGE DISCOVERY**

**UNIT I**

Data Mining:- Basic concept ,technology and rules, DM techniques, Mining problems, Issues and Challenges in DM, application of data mining, KDD v/s Data Mining, DBMS v/s Data Mining, DM Application areas. Data mining techniques: Exploration of data mining methodologies, decision tables, decision trees, classification rules, association rules, clustering, statistical models & linear models.

**UNIT II**

Mining Association Rules in Large Databases:- Association Rule Mining, Single Dimensional Boolean Association Rules, Multi-Level Association Rule, Apriori Algorithm, FpGrowth Algorithm, Time series mining association rules, latest trends in association rules mining.

**UNIT III**

Rules & Clustering Techniques:- Introduction, Various association algorithms like A Priori, Partition, Pincer search etc. Clustering paradigms; Partitioning algorithms like K- Method, CLARA, CLARANS; Hierarchical clustering, DBSCAN, BIRCH, CURE; Categorical Clustering algorithms, STIRR, ROCK, CACTUS.

**UNIT IV**

Data Mining of Image and Video:- A case study. Image and Video representation techniques, feature extraction, motion analysis, content based image and video retrieval, clustering and association paradigm, knowledge Web mining: Introduction to web mining techniques, web basics and HTTP, data sources on the web, personalization, working with logs, forms and cookies, user identification and path analysis, E-Metrics.

**UNIT V**

Data Warehousing:- Need for data warehousing , Basic elements of data warehousing, Data Mart, Data Warehouse Architecture, extract and load Process, Clean and Transform data, Star, Snowflake and Galaxy Schemas for Multidimensional databases, Fact and dimension data, Partitioning Strategy-Horizontal and Vertical Partitioning.

**REFERENCES:-**

1. Han, Kamber, "Data Mining Concepts & Techniques".
2. M.Kaufman. Data Mining Techniques; Arun K.Pujari ; University Press.
3. Mastering Data Mining; Berry Linoff; Wiley
4. Data Mining; Adriaans & Zantinge; Pearson education.

**ITC-705(B)**

**E-COMMERCE AND GOVERNANCE**

**UNIT I**

Introduction to e-commerce: History of e-commerce, e-business models B2B, B2C, C2C, C2B, legal; environment of e-commerce, ethical issues, electronic data interchange, value chain and supply chain, advantages and disadvantages of e-commerce.

**UNIT II**

Electronic Payment Systems: Credit cards, debit cards, smart cards, e-credit accounts, e-money, Marketing on the web, marketing strategies, advertising on the web, customer service and support, introduction to m-commerce, case study: e-commerce in passenger air transport.

**UNIT III**

E-Government, theoretical background of e-governance, issues in e-governance applications, evolution of e-governance, its scope and content, benefits and reasons for the introduction of e-governance, e-governance models- broadcasting, critical flow, comparative analysis, mobilization and lobbying, interactive services / G2C2G.

**UNIT IV**

E-readiness, e-government readiness, E- Framework, step & issues, application of data warehousing and data mining in e-government, Case studies: NICNET-role of nationwide networking in e-governance, e-seva.

**UNIT V**

E-Government systems security: Challenges and approach to e-government security, security concern in e-commerce, security for server computers, communication channel security, security for client computers.

**REFERENCES:-**

1. Gary P. Schneider, "E-commerce", Cengage Learning India.
2. C.S.R. Prabhu, "E-governance: concept and case study", PHI Learning Private Limited.
3. V. Rajaraman, "Essentials of E-Commerce Technology", PHI Learning Private Limited.
4. David Whiteley, "E-commerce study, technology and applications", TMH.

**ITC-705(C)**  
**BIOINFORMATICS**

**UNIT-I**

Introduction:-Introduction to bioinformatics, objectives of bioinformatics, Basic chemistry of nucleic acids, structure of DNA & RNA, Genes, structure of bacterial chromosome, cloning methodology, Data maintenance and Integrity Tasks.

**UNIT-II**

Bioinformatics Databases & Image Processing :- Types of databases, Nucleotide sequence databases, Protein sequence databases, Protein structure databases, Normalization, Data cleaning and transformation, Protein folding, protein function, protein purification and characterization, Introduction to Java clients, CORBA, Using MYSQL, Feature Extraction.

**UNIT-III**

Sequence Alignment and database searching:- Introduction to sequence analysis, Models for sequence analysis, Methods of optimal alignment, Tools for sequence alignment, Dynamics Programming, Heuristic Methods, Multiple sequence Alignment

**UNIT-IV**

Gene Finding and Expression:- Cracking the Genome, Biological decoder ring, finding genes through mathematics & learning, Genes prediction tools, Gene Mapping, Application of Mapping, Modes of Gene Expression data, Mining the Gene Expression Data.

**UNIT-V**

Proteomics & Problem solving in Bioinformatics:- Proteome analysis, tools for proteome analysis, Genetic networks, Network properties and analysis, complete pathway simulation. E- cell, Genomic analysis for DNA & Protein sequences, Strategies and options for similarity search, flowcharts for protein structure prediction .

**REFERENCES:**

1. Gopal & Jones, BIOINFORMATICS with fundamentals of Genomics & Proteomics, TMH Pub
2. Rastogi, Bioinformatics –Concepts, skills & Applications, CBS Pub
3. Bergeron, Bioinformatics computing, PHI
4. Claverie, Bioinformatics, Wiley pub

**ITC-706(A)**  
**WIRELESS NETWORK**

**UNIT – I**

Introduction of Wireless Networks, wireless network architectures, Different Generations of Wireless Networks. Characteristics of the Wireless Medium: Radio Propagation Mechanisms, Path Loss Modeling and Signal Coverage, Effect of Multipath and Doppler, Channel Measurement and Modeling Techniques. Narrowband digital modulation and Coding under wireless fading environments.

**UNIT – II**

Introduction WLAN technologies:- Infrared, UHF narrowband, spread spectrum IEEE802.11: System architecture, protocol architecture, physical layer, MAC layer, 802.11b, 802.11a – Hiper LAN: WATM, BRAN, HiperLAN2 – Bluetooth: Architecture, Radio Layer, Baseband layer, Link manager Protocol, security IEEE802.16 WIMAX: Physical layer, MAC, Spectrum allocation for WIMAX.

**UNIT – III**

Network Planning: Introduction, Wireless Network Topologies, Cellular Topology, Cell Fundamentals, Signal to Interferences Radio Calculations, Network Planning for CDMA Systems. Wireless Network Operations: Mobility Management, Radio Resources and Power Management.

**UNIT – IV**

Introduction Mobile IP:- IP packet delivery, Agent discovery, tunneling and encapsulation, IPV6 Network layer in the internet Mobile IP session initiation protocol mobile adhoc network: Routing, Destination Sequence distance vector, Dynamic source routing. MOBILE TRANSPORT LAYER TCP enhancements for wireless protocols Traditional TCP: Congestion control, fast retransmit/fast recovery, Implications of mobility Classical TCP improvements: Indirect TCP, Snooping TCP, Mobile TCP, Time out freezing, Selective retransmission, Transaction oriented TCP, TCP over 3G wireless networks.

**UNIT – V**

IEEE 802.15 WPAN, Home RF, Bluetooth, Interference between Bluetooth and 802.11, Adhoc Networks, Introduction to 2.5G and 3G Networks., 3GSGSN, 3GGGSN, SMSGMSC/ SMSIWMSC, Firewall, DNS/DHCP High speed Downlink packet access (HSDPA) LTE network architecture and protocol. 4G NETWORKS Introduction – 4G vision – 4G features and challenges Applications of 4G – 4G Technologies: Multicarrier Modulation, Smart antenna techniques, OFDMMIMO systems, Adaptive Modulation and coding with time slot scheduler, Cognitive Radio.

**REFERENCES:**

1. Erik Dahlman, Stefan Parkvall, Johan Skold and Per Beming, "3G Evolution HSPA and LTE for Mobile Broadband", Second Edition, Academic Press, 2008.
2. Anurag Kumar, D.Manjunath, Joy kuri, "Wireless Networking", First Edition, Elsevier 2011.
3. Simon Haykin, Michael Moher, David Koilpillai, "Modern Wireless Communications", First Edition, Pearson Education 2013

**ITC-706(B)**  
**Corel DRAW Graphics**

**UNIT I**

Basics of CorelDraw, such as creating and saving documents, using fonts, resizing, rotating and moving documents and getting help. Create a report cover that contains a page border, an image from a symbol font, a title in artistic text and paragraph text. Font usage, design Identification tools in the toolbox and use several common tools to create a half-page flyer for a party invitation. Ways to apply color to an object and/or its outline, reflective vs. direct color and how this relates to RGB and CMYK colors and screen vs. printed colors.

**UNIT II**

Basics of using vector graphics and node editing for graphics and text, multi-page layouts and the Print Preview dialog, and import and edit clipart, combine vector and bitmap images as they create a standard page (letter/A4). Corel PHOTO-PAINT® program works with CorelDraw. Editing a photo might be deemed deceitful, digital photography techniques in photography.

**UNIT III**

Templates: open an existing template file, modify it and create their own templates. Creating a two-page newsletter, use text in columns, flow text from column-to-column and page-to-page, wrap text around graphics and create drop caps. Use of Lorem Ipsum text, possible modern replacements, and the difference between newsletters, blogs and other social media in usage and design. ,work with bitmap and vector effects, layers, lenses and masks, while creating a collage of images and text on a chosen topic.

**UNIT IV**

Design and automation processes as they create a personal letterhead suite that includes mailing labels. Print Merge/Data Merge capabilities of CorelDraw, Interactive Fill Tool. Use of personalized mailings in marketing and other areas. Page Layout dialog, brochure designs and creating promotional materials, tools for text and graphics creation, page layout options, Extrude and Bevel tools.

**UNIT V**

3D effects to text and objects using Callouts and Connectors for creating charts, the Ellipse tool to draw pie shapes and Table and Paragraph formatting tools for layout, slideshow that includes charts, graphs and 3D bitmap effects, macro in CorelDRAW to create a 12-month pictorial calendar. Identifying the difference between a Macro and a Script, learning how to write a script, and considering safety issues surrounding the usage of downloaded scripts.

**REFERENCE BOOKS:**

1. Corel Draw X8: The Official Guide by Garry David Bouton
2. Corel Draw X3 ,by LP Editorial Board
3. Coreldraw X7 ,by VISHNU P. SINGH

**Unit 1: Overview of Knowledge Management:**

Introducing Knowledge Management, Need for Knowledge Management, Valuation of Intellectual Capital, Intellectual Capital: Human vs. Structural Capital, Forces Driving Knowledge Management, Knowledge Management Systems, Issues in Knowledge Management

**Unit 2: The Nature of Knowledge:**

What is Data, Information ?, What is Knowledge?, Data, Information, and Knowledge with Examples, Types of Knowledge, Subjective View of knowledge, Objective View of Knowledge, Procedural vs. Declarative Knowledge, Tacit vs. Explicit Knowledge, General vs. Specific Knowledge, Technically vs. Contextually Specific Knowledge, Knowledge and Expertise, Types of Expertise, Types of Knowledge, Codifiability and Teachability of Knowledge, Specificity of Knowledge, Reservoirs of Knowledge, Characteristics of Knowledge,

**Unit 3: Technologies to Manage Knowledge:**

Artificial Intelligence and Understanding Knowledge: Cognitive Psychology , Data, Information and Knowledge , Kinds of Knowledge, Expert Knowledge, Thinking and Learning in Humans , Knowledge vs Intelligence, dumb search, Heuristic search in Knowledge-Based Systems, Knowledge Based Systems for KM, What kinds of knowledge are in Knowledge-Based Systems?, Knowledge Based Systems vs Expert Systems, Advantage and disadvantage of Knowledge Based Systems vs Expert Systems.

**Unit 4: Knowledge Management Systems Life Cycle:**

Challenges in KM Systems Development, Conventional Vs KM Systems Life Cycle(KMSLC), Key Differences , Key Similarities, KMSLC Approaches .

**Unit 5: Knowledge Creation & Knowledge Architecture:**

Knowledge Creation, Nonaka's Model of Knowledge Creation & Transformation, Knowledge Architecture , Acquiring the KM System.

**TEXTBOOK:**

1. Knowledge Management in Theory and Practice - 2nd edition by Kimiz Dalkir:
2. Knowledge Management Paperback – 2007 by Shelda Debowski

### ITC – 707 Industrial Training - II

Students must observe following points to enrich their learning in electrical engineering during industrial training:

- The training must be the advance/ different already done on minor training.
- Industrial environment and work culture.
- Organizational structure and inter personal communication.
- Machines/ equipment/ instruments - their working and specifications.
- Product development procedures and phases.
- Project planning, monitoring and control.
- Quality control and assurance.
- Maintenance system.
- Costing system.
- Stores and purchase systems.
- Roles and responsibilities of different categories of personnel.
- Customer services.
- Problems related to various areas of Work etc.
- Layout if any

**To be submitted :**The students has to submit the power point presentation of minimum15 slides of the training performed (comprising of points stated above) along with the original certificate of training performed with proper seal and signature of the authorized person.