



Department of Computer Science & Engineering

MATs University

Aarang, Raipur (C.G.)

Syllabus Scheme of B. Tech.

VIII Semester



S. No.	Code	Subject	Periods per Week			Scheme of Marks		Total Credit
			L	T	P	ESE	IM	
1.	BT820	Data Mining and Warehousing	4	0	-	70	30	4
2.	BT821X	Professional Elective – III	4	0	-	70	30	4
3.	BT822X	Open Elective – III	3	0	-	70	30	3
4.	BT823	Data Mining Lab	-	0	2	30	20	1
5.	BT824	Major Project & Dissertation	-	0	18	120	80	12
Total			11	0	20	360	190	24

L – Lecture, T – Tutorial, ESE – End Semester Examination,

P – Practical, IM – Internal Marks (Include Class Test & Teacher’s Assessments)

Professional Elective – III

Subject Code	Subject Name
BT8211	Digital Image Processing
BT8212	Bio-Informatics
BT8213	Genetic Algorithm
BT8214	Grid Computing
BT8215	Big Data & Hadoop

Open Elective – III

Subject Code	Subject Name
BT8221	Enterprise Resource Planning
BT8222	E- Commerce & Strategic IT
BT8223	Decision Support & Executive Information System
BT8224	Cyber Law
BT8225	Project Planning Management & Evaluation



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



DATA MINING AND WARE HOUSING (BT820)

Course Objectives:

1. To understand the overall architecture of a data warehouse.
2. To discuss different data mining models and techniques.
3. To evaluate different models used for OLAP and data pre-processing.
4. To design and implement systems for data mining and evaluate the performance of different data mining algorithms.
5. To propose data mining solutions for different applications.
6. To differentiate online transaction processing and online analytical processing.

UNIT – I INTRODUCTION TO DATA WAREHOUSE

Overview and Concepts: Need for Data Warehousing, Basic Elements of Data Warehousing, Trends in Data Warehousing. Planning and Requirements: Project Planning and Management, Collecting the Requirements. Architecture and Infrastructure: Architectural Components, Infrastructure and Metadata.

UNIT – II DATA DESIGN AND DATA REPRESENTATION

Principles of Dimensional Modeling, Dimensional Modeling Advanced Topics, Data Extraction, Transformation and Loading, Data Quality.

UNIT – III INFORMATION ACCESS AND DELIVERY

Matching Information to Classes of Users, OLAP in Data Warehouse, Data Warehousing and the Web, Implementation and Maintenance: Physical Design process, Data Warehouse Deployment, Growth & Maintenance.

UNIT – IV DATA MINING

Introduction: Basics of data mining, related concepts, Data mining techniques. Data Mining Algorithms: Classification, Clustering, Association rules. Knowledge Discovery: KDD Process.

UNIT – V WEB MINING

Web Mining: Web Content Mining, Web Structure Mining, and Web Usage Mining. Advanced Topics: Spatial Mining, Temporal Mining, Visualization, Data Generalization and Summarization based Characterization. Analytical characterization: Analysis of Attribute Relevance. Mining Class Comparisons: Discriminating between different Classes, Mining Descriptive Statistical Measures in Large Databases, Data Mining Primitives, Languages, and System Architectures, Query Language, Designing GUI based on a Data Mining Query Language, Architectures of Data Mining Systems Application and Trends in Data Mining: Applications, Systems Products and Research Prototypes, Additional Themes in Data Mining, Trends in Data Mining.

Text Books:

1. Prabhu, Data ware housing- concepts, Techniques, Products and Applications, Prentice hall of India
2. Soman K P, "Insight into Data Mining: Theory & Praticce", Prentice hall of India
3. M.H. Dunham, "Data Mining Introductory and Advanced Topics", Pearson Education.

Reference Books:

1. Paulraj Ponniah, "Data Warehousing Fundamentals", John Wiley.
2. Gupta, "Introduction To Datamining with Case Studies", PHI
3. Ralph Kimball, "The Data Warehouse Lifecycle toolkit", John Wiley.
4. IBM, "Introduction to Building The Datawarehouse" PHI

Course Outcome:

After completion of the course study, students will be able to

1. Design a data warehouse for an organization.
2. Write queries using DMQL.
3. Extract knowledge using data mining techniques.
4. Adapt new data mining tools.
5. Explore recent trends and advancement in data mining such as web mining, spatial-temporal mining.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



DATA MINING LAB (BT823)

1. Demonstration of preprocessing on dataset student.arff.
2. Demonstration of preprocessing on dataset labor.arff.
3. Demonstration of Association rule process on dataset contactlenses.arff using apriori algorithm.
4. Demonstration of Association rule process on dataset test.arff using apriori algorithm.
5. Demonstration of classification rule process on dataset student.arff using j48 algorithm.
6. Demonstration of classification rule process on dataset employee.arff using j48 algorithm.
7. Demonstration of classification rule process on dataset employee.arff using id3 algorithm.
8. Demonstration of classification rule process on dataset employee.arff using naïve bayes algorithm.
9. Demonstration of clustering rule process on dataset iris.arff using simple k-means.
10. Demonstration of clustering rule process on dataset student.arff using simple k-means.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



MAJOR PROJECT AND DISSERTATION (BT824)

Allocation of project:

1. Information regarding broad area must be made available to the students well in advance (may be during previous semester).
2. Information must cover following parameters:
 - I. **Broad Area:** Subject or expertise/application area.
 - II. **Required Skills:** Knowledge of subject(s), Software, Tools & Other Characteristics.
 - III. **Type of Project:** Hardware, software, design, survey, study based etc.
 - IV. **Guide Available:** Name of Guide (S) from Department & Institute.
3. It is also recommended to give proper counseling to pick up suitable project.
4. Students must get chance to select projects as per their choice or decided mutually between Students and Department Faculty (HoD) concern.
5. One project group must contain maximum four students, however students can do project individually but it should be approved by department.
6. Compiled list of projects must be submitted within 25 days of start of semester.
7. Compiled list may contain following parameters.

Sr. No.	Title of Project	Name of Students	Name of Guide

Name of HOD
Signature of HOD

Signature of Principal

Monitoring of project:

1. It is recommended to give projects as per the specializations of existing faculty of the department instead of outside person/agency.
2. Project must be allocated, developed and monitored by department / institution itself, but not by outside agencies.
3. Regular review by guide is recommended to ensure development & contribution of students.

Internal Evaluation & Submission of project:

1. Evaluation of project would be as per the examination scheme of the University, which is based on internal as well as external evaluation.
2. Internal assessment requires submission of project report for getting approved by the concern authority. However printing and binding would be as per the conventional format.
3. Evaluation will be based on live demonstration/ presentation and Viva.
4. Final submission of project is expected as,
 - One copy to the Institution central library,
 - One copy to the department.

External Evaluation:

External assessment of project would be like conduction of practical exams of University, and must be executed as per the norms of practical exams.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



DIGITAL IMAGE PROCESSING (BT8211)

Course Objectives:

1. To learn the basic theory and algorithms that is widely used in digital image processing.
2. To give exposure to the students about current technologies and issues that is specific to image processing systems.
3. To develop idea of using computers to process images.
4. To develop critical thinking about shortcomings of the state of the art in image processing.

UNIT – I INTRODUCTION

Image Formation Model, Spatial & Gray Level Resolution, Image Enhancement In Special Domain: Piecewise Transformation Functions, Histogram Equalization, Histogram Specification, Image Averaging, Spatial Filter, Smoothing and Sharpening, Laplacian Filter, Canny Edge Detector.

UNIT – II IMAGE ENHANCEMENT IN FREQUENCY DOMAIN & IMAGE SEGMENTATION

2D Discrete Fourier Transform & its Inverse, Filtering in Frequency Domain, Ideal & Gaussian Low Pass Filters, High Pass Filtering, FFT, Line Detection, Edge Detection, Edge Linking & Boundary Detection, Thresholding, Region Based Segmentation.

UNIT – III MORPHOLOGICAL IMAGE PROCESSING

Logic Operations Involving Binary Image, Dilation & Erosion, Opening & Closing, Applications to Boundary Extraction, Region Filling, Connected Component Extraction.

UNIT – IV IMAGE COMPRESSION

Coding Redundancy, Huffman Coding, LZW Coding, Run Length Coding, Lossy Compression, DCT, JPEG, MPEG, and Video Compression.

UNIT – V IMAGE REPRESENTATION & 3D

Boundary Descriptors, Shape Numbers, Texture, Projective Geometry, Correlation Based And Feature Based Stereo Correspondence, Shape From Motion, Optical Flow.

Text Books:

1. Ganzalez and Woods, Digital Image Processing, Pearson education.
2. Sonka and Brooks, Image Processing, TSP ltd,

Reference Books:

1. Jain and Rangachar, Machine Vision, MGH.
2. Schalkoff, Digital Image Processing, John Wiley and sons.

Course Outcome:

After completion of the course study, students will be able to

1. Describe, analyze and reason about how digital images are represented, manipulated, encoded and processed, with emphasis on algorithm design, implementation and performance evaluation.
2. Apply principles and techniques of digital image processing in applications related to digital imaging system design and analysis.
3. Analyze and implement image processing algorithms.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



BIO-INFORMATICS (BT8212)

Course Objectives:

1. To provide students with a practical and hands-on experience with common bioinformatics tools and databases.
2. To train students in the basic theory and application of programs used for database searching, protein and DNA sequence analysis, prediction of protein function.

UNIT – I INTRODUCTION

Bioinformatics: Introduction, Application, Data Bases and Data Management, Central Dogma; information Search and Data Retrieval, Genome Analysis and Gene Mapping- Analysis, Mapping, Human Genome Project (HGP).

UNIT – II SEQUENCE ALIGNMENT METHODS

Alignment of Pairs and Sequences, Alignment of Multiple Sequences and Phylogenetic Analysis, Tools for similarity Search and Sequence Alignment- FASTA BLAST.

UNIT – III IMPLEMENTATION METHODS

Profiles and Hidden Markov Models (Hmms), Gene Identification and Prediction-Basics, Pattern Recognition, Methods and Tools, Gene Expression and Micro Arrays.

UNIT – IV PROTEIN CLASSIFICATION AND STRUCTURE VISUALIZATION

Protein Classification and Structure Visualization; Protein Structure Prediction; Proteomics, Computational Methods: Analysis of Pathways, Metabolic Network Properties, Metabolic Control Analysis, Stimulation of Cellular Activities, Biological Markup Languages.

UNIT – V DRUG DISCOVERY

Drug Discovery: Introduction, Technology and Strategies, Cell Cycle, G-protein, Coupled, Receptors. Computer Aided Drug Design: Introduction, Drug Design Approaches, Designing methods, ADME-Tox Property Prediction.

Text Books:

1. Bioinformatics- Concepts Skills & Applications, S.C. Rastogy, 2nd Edition, Prentice Hall of India.
2. Bioinformatics, V. R Srinivas, Prentice Hall of India

Reference Books:

1. Bioinformatic Computing, Bergeron, MIT Press.
2. Evolutionary Computation in Bioinformatics, Gary B. Fogel, David W. Corne (Editors), 2002.
3. Introduction to Bioinformatics, Arthur M. Lesk, 2002, Oxford University Press.
4. Current Topics in Computational Molecular Biology (Computational Molecular Biology), Tao Jiang, Ying Xu, Michael Zhang (Editors), 2002, MIT Press.

Course Outcome:

After completion of the course study, students will be able to

1. Access, evaluate, and interpret bioinformatics/public health data.
2. Use informatics methods and resources as strategic tools to promote bioinformatics.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



GENETIC ALGORITHM (BT8213)

Course Objectives:

1. To introduce basics of genetic algorithms.
2. To familiarize with Mathematical foundations for Genetic algorithm, operators
3. To study the Applications of Genetic Algorithms.

UNIT – I INTRODUCTION

Introduction and Overview, Pervasiveness of the Problem of Program Induction, Introduction to Genetic Algorithms, Representation Problem for Genetic Algorithms, Overview of Genetic Programming, Detailed Description of Genetic Programming, Introductory Examples of Genetic Programming.

UNIT – II IMPLEMENTATION ASPECTS

Computer Implementation, Data Structure, Reproduction, Crossover, Mutation, Mapping Objective Function to Fitness Form, Fitness Scaling, Coding, Discretization, Constraints.

UNIT – III GENETIC ALGORITHM EVOLUTION

Amount of Processing required solving a Problem, Non Randomness of Genetic Programming, Symbolic Regression Q Error-Driven Evolution, Control Q Cost-Driven Evolution, Evolution of Emergent Behavior, Evolution of Subsumption, Entropy-Driven Evolution, Evolution of Strategy, co-Evolution.

UNIT – IV APPLICATIONS

Risk of Genetic Algorithm, Genetic Algorithm Application of Historical Interest, Function Optimization, Improvement in Basic Techniques, Current Applications of Genetic Algorithms.

UNIT – V COMPARATIVE ANALYSIS

Parallelization of Genetic Programming, Ruggedness of Genetic Programming, Extraneous Variables and Functions, Operational Issues, Review of Genetic Programming Comparison with Other Paradigms.

Text Book:

1. "Genetic algorithm in search optimization and machine learning", David E Goldberg.

Reference Book:

1. "An Introduction to genetic Algorithms ", Melanie Mitchell MIT Press

Course Outcome:

After completion of the course study, students will be able to

1. Implement genetic algorithm functions and operators.
2. Develop genetic algorithm applications.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



GRID COMPUTING (BT8214)

Course Objectives:

1. To understand the need for and evolution of Grids in the context of processor, and data intensive applications.
2. To be familiar with the fundamental components of Grid environments, such as authentication, authorization, resource access, and resource discovery.

UNIT – I CONCEPTS AND ARCHITECTURE

Introduction: Parallel and Distributed Computing, Cluster Computing, Grid Computing Anatomy and Physiology of Grid, Web and Grid Services, Grid Standards – OGSA WSRF- Trends, Challenges and Applications.

UNIT – II GRID MONITORING

Grid Monitoring: Grid Monitoring Architecture (GMA) - An Overview of Grid Monitoring Systems- R-GMA –Grid ICE – MDS Service Level Agreements (SLAs) - Other Monitoring Systems Ganglia, Grid Mon, Hawkeye and Network Weather Service.

UNIT – III GRID SECURITY AND RESOURCE MANAGEMENT

Grid Security: A Brief Security Primer-PKI-X509 Certificates-Grid Security-Grid Scheduling and Resource Management, Gridway and Gridbus Broker-principles of Local Schedulers- Overview of Condor, SGE, PBS, LSF Grid Scheduling with QoS.

UNIT – IV DATA MANAGEMENT AND GRID PORTALS

Data Management: Categories and Origins of Structured Data, Data Management Challenges, Architectural Approaches, Collective Data Management Services, Federation Services, Grid Portals, Generations of Grid Portals.

UNIT – V GRID MIDDLEWARE

List of globally available Middleware: Case Studies, Recent version of Globus Toolkit and gLite Architecture, Components and Features, Features of Next generation grid.

Text Books:

1. The Grid 2: Blueprint for a New Computing Infrastructure, Ian Foster, Carl Kesselman, Elsevier Series, 2004.
2. High Performance Computing: Paradigm and Infrastructure, Parvin Asadzadeh, Rajkumar Buyya, Chun Ling Kei, Deepa Nayar, and Srikumar Venugopal, Wiley Press.

Reference Books:

1. Grid Computing for Developers, Vladimir Silva, Charles River Media, January 2006.
2. Grid Computing: Making The Global Infrastructure a Reality, Fran Berman , Geoffrey Fox, Anthony J.G. Hey, Wiley, 2003.
3. The Grid: Core Technologies, Maozhen Li , Mark Baker, Wiley, 2005.
4. Globus Toolkit 4 : Programming Java Services , The Elsevier Series in Grid Computing, Borja Sotomayor , Lisa Childers, Morgan Kaufmann, 2005.

Course Outcome:

After completion of the course study, students will be able to

1. Justify the applicability, or non-applicability of Grid technologies for a specific application.
2. Evaluate enabling technologies such as high-speed links and storage area networks for building computer grids.
3. Design a grid computing application in one of the key application areas e.g. Computer Animation, EResearch.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



BIG DATA & HADOOP (BT8215)

Course Objectives:

1. To understand the basics of Big Data Analytics and Hadoop.
2. To analyze the big data using intelligent techniques.
3. To develop various search methods and visualization techniques.
4. To explore various techniques for mining data streams.
5. To understand the application area of Big Data.

UNIT – I CONCEPTS OF BIG DATA

Concept of Big Data Platform, Evolution and Challenges of Conventional Systems, Intelligent Data Analysis, Nature of Data, Analytic Processes and Tools, Analysis vs. Reporting, Modern Data Analytic Tools, Applications of Big Data.

UNIT – II MINING DATA STREAMS

Introduction to Streams Concepts, Characteristics, Stream Data Model and Architecture, Stream Computing, Sampling Data in a Stream, Filtering Streams, Counting Distinct Elements in a Stream, Estimating Moments, Counting Oneness in a Window, Decaying Window, Role of High Speed Mass Storage.

UNIT – III HADOOP: History of Hadoop, The Hadoop Distributed File System, Components of Hadoop, Analyzing the Data with Hadoop, Scaling Out, Hadoop Streaming, Map Reduction Working, Anatomy of a Map Reduce Job Run Failures, Job Scheduling, Shuffle and Sort, Task Execution, Map Reduce Types and Formats, Map Reduce Features.

UNIT – IV HADOOP ENVIRONMENT

Setting up a Hadoop Cluster, Cluster Specification, Cluster Setup and Installation, Hadoop Configuration, Security in Hadoop, Administering Hadoop, HDFS, Monitoring, Maintenance-Hadoop, Benchmarks Hadoop in the Cloud.

UNIT – V FRAMEWORKS

Applications on Big Data Using Pig and Hive, Data processing operators in Pig, Hive services, HiveQL Querying Data in Hive, Fundamentals of H.

Text Books:

1. Intelligent Data Analysis, Michael Berthold, David J. Hand, Springer, 2007.
2. Hadoop: The Definitive Guide, Tom White, O'reilly Media, 2012.
3. Mining of Massive Datasets, Anand Rajaraman and Jeffrey David Ullman, Cambridge University Press, 2012.

Course Outcomes:

After completion of the course study, students will be able to

1. Have idea about intelligent applications.
2. Use knowledge of vast data.
3. Know different big data modelling techniques.
4. Work in Hadoop environment.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



ENTERPRISE RESOURCE PLANNING (BT8221)

Course Objectives:

1. To introduce Enterprise System functionality.
2. To learn the Business Processes.
3. To get the idea about real time implementation scenario of ERP.

UNIT – I CONCEPTUAL FOUNDATION OF BUSINESS PROCESS REENGINEERING

Role of Information Technology and BPR; Process Improvement and Process Redesign, Process Identification and Mapping; Role/Activity Diagrams, Process Visioning, and Benchmarking.

UNIT – II ENTERPRISE RESOURCE PLANNING

Evolution of ERP- MRP and MRP II, Structure of ERP- Two Tier Architecture, Three Tier Architecture, Electronic Data Processing, Management Information System, Executive Information System, ERP as an Integrator of Information Needs at Various Levels.

UNIT – III TYPICAL BUSINESS PROCESSES

Core Processes, Product Control, Sales Order Processing, Purchases, Administrative Processes, Human Resource, Finance Support Processes, Marketing, Strategic Planning, Research and Development, Problems in Traditional View.

UNIT – IV ERP MODELS/FUNCTIONALITY

Sales Order Processing, Production Scheduling, Forecasting, Distribution, Finance, Features of Each of the Models, and Description of Data Flow across each module, Overview of Supporting Databases & Packages

UNIT – V ERP IMPLEMENTATION ISSUES

Opportunities and Problems in ERP Selection, and Implementation; ERP Implementation: Identifying ERP Benefits, Team Formation, Consultant Intervention, Selection of ERP, and Process of ERP.

Text Books:

1. ERP, Concepts and Practices, V. K. Garg & N. K. Venkatkrishnan, PM.
2. Enterprise wide Resource Planning-theory and practice, Rahul V. Altekhar, PHI.
3. Enterprise Resource Planning, Alexis Leon, TMH.

References Books:

1. MIS, S. Sadagopan, PM.
3. Analysis and Design of Information Systems, V. Rajaraman, PHI.
4. Concepts in ERP, Monk' & Brady, Vikas pub, Thomson

Course Outcomes:

After completion of the course study, students will be able to

1. Demonstrate a good understanding of basic issues in Enterprise Systems.
2. Explain the scope of an Enterprise Systems.
3. Describe the selection, acquisition and implementation of enterprise systems
4. Explain the challenges associated with implementing enterprise systems and their impacts on organizations.
5. Communicate and assess an organization's readiness for enterprise system implementation with a professional approach in written form.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



E-COMMERCE & STRATEGIC IT (BT8222)

Course Objectives:

1. To understand the business impact and potential of e-commerce.
2. To learn the technologies associated with e-Commerce.
3. To learn e-commerce from an enterprise point of view.
4. To learn the security concern related to e-commerce.

UNIT – I INTRODUCTION

E-Commerce History and Evolution, E-Commerce Industry Framework, Brief History of Ecommerce, Consumer to Business Electronic Commerce, Architectural Framework, Internet and other Novelties, Networks and Electronic Transactions Today.

UNIT – II ENCRYPTION

Encryption Techniques, Symmetric Encryption: Secret Key Encryption, Asymmetric Encryption: Public and Private Pair Key Encryption, Digital Signatures, Virtual Private Network, Domain Name Server, LAN, Electronic Commerce Online Resources Designing, Electronic Payment Systems.

UNIT – III ELECTRONIC PAYMENT SYSTEMS

Types of electronic payment systems, digital token-based electronic payment systems, smart cards & electronic payment systems, credit card based electronic payment systems, Internet Strategies: Internet Techniques, Shopping techniques and online selling techniques;

UNIT – IV INFORMATION DISTRIBUTION AND MESSAGING

FTP, E-Mail, www server, HTTP, Web service implementation, Information publishing , Web Browsers, HTML, Common Gateway Interface

UNIT – V MOBILE & WIRELESS COMPUTING FUNDAMENTALS

Mobile computing framework, wireless delivery technology and switching methods, mobile information access devices, mobile data internetworking standards, cellular data communication protocols, mobile computing applications, personal communication service.

Text Books:

1. Frontiers of E-commerce, Kalakota & Whinston, Addison Wesley.
2. E-Business Road Map for Success, Dr. Ravi Kalakota & Marcia Robinson, Addison Wesley.
3. Electronic Commerce by Bharat Bhasker, TMH.

Reference Books:

1. Pete Lohsin , John Vacca “Electronic Commerce”, New Age International.
2. Goel, Ritendra “E-commerce”, New Age International.

Course Outcomes:

After completion of the course study, students will be able to

1. Apply the skills necessary for large scale web based e-commerce project development.
2. Work on information distribution and messaging services in e-commerce applications.
3. Work on business applications of wireless and mobile technologies for e-commerce.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



DECISION SUPPORT & EXECUTIVE INFORMATION SYSTEM (BT8223)

Course Objective:

1. To get idea about the fundamental terms, concepts and theories associated with Decision Support Systems, computerized decision aids, expert systems, group support systems and executive information systems.
2. To examine examples and case studies documenting computer support for organizational decision making, and various planning, analysis and control tasks.
3. To discuss and develop the analysis, design and implementation of computerized Decision Support Systems.

UNIT – I DECISION SUPPORT SYSTEM

What is a DSS? Decision Making Rational Decisions, Definitions of Rationality, Bounded Rationality and Muddling Through, The Nature of Managers, Appropriate Data Support, Information Processing Models, Group Decision Making.

UNIT – II COMPONENT OF DSS

Data Component : Information and its Usefulness, Characteristics of Information, Databases to Support Decision Making, Database Management Systems, Data Warehouses, Data Mining and Intelligent Agents Model Component:-Models Representation Methodology, Time Model Based Management Systems, Access to Models, Understandability of Results, Integrating Models Sensitivity of a Decision, Brainstorming and Alternative Generation, Evaluating Alternatives, Running External Models, Mail Component: Integration of Mail Management Examples of Use implications for DSS.

UNIT – III INTELLIGENCE AND DECISION SUPPORT SYSTEMS

Programming Reasoning, Backward Chaining Reasoning, Forward Chaining Reasoning, Comparison, Certainty Factors, User-Interface Component: User Interface Components, The Action Language, Menus, Command Language, I/O Structured Formats, Free Form Natural Language, The Display or Presentation Language, Windowing Representations, Perceived Ownership of Analyses, Graphs and Bias Support for All Phases of Decision Making, The Knowledge Base Modes of Communication

UNIT – IV DESIGNING A DSS

Planning for DSS, Designing a Specific DSS, Interviewing Techniques, Other Techniques, Situational Analysis, Design Approaches, Systems Built from Scratch, Using Technology to Form the Basis of the DSS, Evaluating a DSS Generator, Using a DSS Generator, The Design Team, DSS Design and Re-engineering Discussion.

UNIT – V IMPLEMENTATION AND EVALUATION OF DSS

Implementation Strategy, Prototypes, Interviewing, User Involvement, Commitment to Change, Managing Change, Institutionalize System, Implementation and System Evaluation, Technical Appropriateness, Measurement Challenges , Organizational Appropriateness.

Text Books:

1. Decision Support System, Vicki I Sauter
2. Management Information system, Gerald V. Post & David L. Anderson.

Reference Books:

1. Decision Support Systems and Intelligent Systems, E. Turban and J.E. Aronson, Prentice Hall.
2. Decision Support Systems, V. S. Janakiraman and K.Sarukesi, PHI.

Course Outcomes:

After completion of the course study, students will be able to

1. Define the relationship between business information needs and decision making



Department of Computer Science & Engineering

MATS University

Aarang, Raipur (C.G.)

Syllabus Scheme of B. Tech.



2. Appraise the general nature and range of decision support systems.
3. Appraise issues related to the development of DSS.

CYBER LAW (BT8224)

Course objectives:

1. To create cyber security awareness.
2. To understand principles of web security.
3. To understand key terms and concepts in cyber law, intellectual property and cyber crimes, trademarks and domain theft.
4. To have idea about issues for creating security policy for a large organization.

UNIT – I INTRODUCTION TO CYBER LAW

Evolution of Computer Technology, Emergence of Cyber Space, Cyber Jurisprudence, Jurisprudence and Law, Doctrinal Approach, Consensual Approach, Real Approach, Cyber Ethics, Cyber Jurisdiction, Hierarchy of Courts, Civil and Criminal Jurisdictions, Cyberspace-Web Space, Web Hosting and Web Development Agreement, Legal and Technological Significance of Domain Names, Internet as a Tool for Global Access.

UNIT – II INFORMATION TECHNOLOGY ACT

Overview of IT Act, 2000, Amendments and Limitations of IT Act, Digital Signatures, Cryptographic Algorithm, Public Cryptography, Private Cryptography, Electronic Governance, Legal Recognition of Electronic Records, Legal Recognition of Digital Signature, Certifying Authorities, Cyber Crime and Offences, Network Service Providers Liability, Cyber Regulations Appellate Tribunal, Penalties and Adjudication.

UNIT – III CYBER LAW AND RELATED LEGISLATION

Patent Law, Trademark Law, Copyright, Software – Copyright or Patented, Domain Names and Copyright Disputes, Electronic Data Base and its Protection, IT Act and Civil Procedure Code, IT Act and Criminal Procedural Code, Relevant Sections of Indian Evidence Act, Relevant Sections of Bankers Book Evidence Act, Relevant Sections of Indian Penal Code, Relevant Sections of Reserve Bank of India Act, Law Relating To Employees And Internet, Alternative Dispute Resolution , Online Dispute Resolution (ODR).

UNIT – IV ELECTRONIC BUSINESS AND LEGAL ISSUES

Evolution and Development in E-Commerce, Paper vs. Paperless Contracts, E-Commerce Models: B2B, B2C, E security.

UNIT – V APPLICATION AREA

Business, Taxation, Electronic Payments, Supply Chain, EDI, E-Markets, Emerging Trends.

Text Book:

1. Cyber Laws: Intellectual property & E Commerce, Security- Kumar K, dominant Publisher.
2. Information Security Policy & Implementation Issues, NIIT, PHI

Reference Books:

1. Cyber Crime Notorious Aspects of the Humans & Net Criminals Activity in Cyber World, Barna Y Dayal D P Dominant Publisher.
2. Cyber Crime Impact in the new millennium, Marine R.C. Author press.
3. Spam Attack, Cyber Stalking & abuse, Barna Y, Dayal D P Dominant publisher.
4. Frauds & Financial criouises in Cyber space, Barna Y, Dayal D P , Dominant publisher.
5. Information Security, NIIT, PHI.

Course Outcome:

After completion of the course study, students will be able to

1. Acknowledge about the cybercrime, cyber criminal, and intellectual property rights.
2. Protection and resilience of critical information infrastructure.
3. To enable effective prevention, investigation and prosecution of cybercrime and enhancement of law enforcement.



Department of Computer Science & Engineering
MATS University
Aarang, Raipur (C.G.)
Syllabus Scheme of B. Tech.



PROJECT PLANNING MANAGEMENT & EVALUATION (BT8225)

Course Objective:

1. To understand the concept of project development.
2. To understand project activities and relevant skills.
3. To learn about project management.

UNIT – I INTRODUCTION

Identification of Projects, Generation and Screening of Idea, Monitoring Corporate Appraisal, Preparing Project Profiles and Project Rating Index.

UNIT – II FEASIBILITY STUDY

Feasibility studies: Market and demand analysis, technical analysis, financial analysis and economic viability.

UNIT – III PROJECT APPRAISAL

Project appraisal: Criteria, Net Present Value, Internal rate of return, Payback Period and Accounting Rate of Return Method.

UNIT – IV PROJECT MANAGEMENT

Project Management and Implementation: Project Planning, Project Control, Prerequisites of Implementation. Network Techniques of Project Management: Project Evaluation and Review Technique (PERT), Critical Path Method (CPM).

UNIT – V PROJECT REVIEW AND EVALUATION

Project Review and Control: Initial Review, Performance Evaluation, Abandonment Analysis and its Behavioural Issues.

Text Book:

1. Project planning, analysis, selection, implementation and review, Prasanna Chandra, TMH.

Reference Book:

1. Project management, Dr. Harold Kerzner.
2. Total Project management, Dr. P K Macmillan.

Course Outcome:

After completion of the course study, students will be able to

1. Plan and manage the project.
2. Review and evaluate the project.