4/4 B.Tech. SECOND SEMESTER

IT8T3C BUSINESS INTELLIGENCE Credits: 4

Lecture: 4 periods/week **Internal assessment: 30 marks**
Tutorial: 1 period /week **Semester end examination: 70 marks**

Objectives:

- To explain the concepts and components of Business Intelligence (BI).
- To impart Knowledge on managerial decision making, business intelligence, analytics, decision support systems and how they relate to other types of information systems.
- To impart Knowledge on DSS architectures, development methodologies and enabling technologies such as Expert Systems, Neural Networks, Knowledge Management, Data Warehousing and Data Mining.

Outcomes:

Student will be able to

- Understand the concepts and components of Business Intelligence.
- Acquire knowledge about different types of object oriented tools.
- Plan the implementation of a BI system.
- Effectively apply data mining techniques in a variety of business applications.

Syllabus:

UNIT-I
Introduction: What is a DSS? Uses of a Decision Support System.
Decision Making: Rational Decisions Bounded Rationality and Muddling Through :Nature of Managers; Appropriate Decision Support: Electronic Memory, Bias in Decision Making.
Appropriate Data Support: Information Processing Models, Tracking Experience.

UNIT-II
Group Decision Making: Intuition, Qualitative Data, and Decision Making: How Do We Support Intuition?.Virtual Experience. Business Intelligence and Decision Making:Analytics. Competitive Business Intelligence.

UNIT-III
Data Component: Specific View toward Included Data; Characteristics of Information Timeliness: Sufficiency, Level of Detail, Understandability, Freedom from Bias, Decision Relevance, Comparability, Reliability, Redundancy, Cost Efficiency, Quantifiability, Appropriateness of Format, More Is Never Better! Databases, Database Management Systems. Data Warehouses: Data Scrubbing, Data Adjustment, Architecture. Car Example: Possible Criteria, Data Warehouse, Information Uses.

UNIT-IV

Model Component: Models and Analytics .Options for Models: Representation, Time Dimension, Linearity of the Relationship, Deterministic Versus Stochastic, Descriptive Versus Normative, Causality Versus Correlation, Methodology Dimension, Problems of Models. Data Mining: Intelligent Agents. Model-Based Management Systems: Easy Access to Models. Understandability of Results, Integrating Models, Sensitivity of a Decision, Model Management Support Tools. Car Example: Brainstorming and Alternative Generation. Flexibility Concerns.Evaluating Alternatives.Running External Models.

UNIT-V

Intelligence And Decision Support Systems: Programming Reasoning : Backward-Chaining Reasoning, Forward-Chaining Reasoning, comparison of Reasoning Processes. Uncertainty: Representing Uncertainty with Probability Theory, Representing Uncertainty with Certainty Factors.

UNIT-VI

User Interface: Goals of the User Interface .Mechanisms of User Interfaces. User Interface Components: Action Language, Display or Presentation Language, Knowledge Base, Car Example.

UNIT-VII

International Decision Support Systems: Information Availability Standards : Data Privacy, Data Availability, Data Flow, Cross-Cultural Modeling. Effects of Culture on Decision Support System. **Object-Oriented Technologies AndDss Design:** Kinds of Development Tools: Non-Object-Oriented Tools, Object-Oriented Tools, Benefits of Object-Oriented Technologies for DSS.

UNIT-VIII

Implementation And Evaluation: Implementation Strategy: Ensure System Does What It Is Supposed To Do the Way It Is Supposed, To Do It, Keep Solution Simple, Develop Satisfactory Support Base. Institutionalize System. Implementation and System Evaluation: Technical Appropriateness, Overall Usefulness. Implementation Success.Organizational Appropriateness.

Text Books:

1. “Decision Support Systems For Business Intelligence”, Vicki L. Sauter, second edition, a john Wiley & sons, inc. Publication.

Reference Books:

1. “Business Intelligence Practices, Technologies, and Management”, Rajiv Sabherwal, Irma Becerra-Fernandez, John Wiley & Sons, Inc.
2. “Decision Support Systems and Intelligent Systems”, Efraim Turban, Ramesh Sharda, DursunDelen, 9th Edition, Pearson 2011.
3. **“**Data Mining for Business: Intelligence Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner**”** by GalitShmueli, Nitin R. Patel and Peter C. Bruce, Wiley, 2007.