

Business Intelligence			
Course Code	22AIM564	CIE Marks	50
Course Type (Theory/Practical/Integrated)	Theory	SEE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	Total Marks	100
Total Hours	40 Hours	SEE	3 Hours
Credits			03

Course Learning Objectives: The objective of the course is to

- Understand the Business Intelligence, Analytics and Decision Support system.
- Understand the decision making process and identify the technologies for decision support systems
- Understand data warehousing, business reporting, visual analytics and business performance management operations.
- Understand the importance of data mining for the decision making process.
- Understand the importance of modelling and automated decision systems in various applications

Module-1 Introduction to Business Intelligence, Analytics and Decision Support (8 hours)

Overview of Business Intelligence, Analytics and Decision Support: Changing Business Environments and Computerized Decision Support, Managerial decision making, Information Systems Support for Decision Making, An Early Framework for Computerized Decision Support, The Concept of Decision Support Systems(DSS), A Framework for Business Intelligence, Business Analytics Overview, Brief Introduction to Big Data Analytics.

Case Study: Business Intelligence, Business Analytics and Big Data. **TB1**

Module-2 Decision Making and Decision Support Systems (8 hours)

Foundations and Technologies for Decision Making: Decision Making, Models, Phases of the Decision-Making Process, The Intelligence Phase, The Design Phase, The Choice Phase, The Implementation Phase, How Decisions Are Supported, Decision Support Systems Capabilities, Decision Support Systems Classification, Decision Support Systems Components.

Case Study: Decision making and Decision Support components. **TB1**

Module-3 Descriptive Analytics: Data warehousing and Business Reporting (8 hours)

Data warehousing: Data Warehousing Definitions and Concepts, Data Warehousing Process Overview, Data Warehousing Architectures, Data Integration and the Extraction, Transformation, and Load (ETL) Processes. Data warehouse Development, Data Warehousing Implementation Issues.

Business Reporting, Visual Analytics, Business Performance Management: Business Reporting Definitions and Concepts, Data and Information Visualization, Different Types of Charts and Graphs, The Emergence of Data Visualization and Visual Analytics, Performance Dashboards, Business Performance Management, Performance Measurement, Balanced Scorecards, Six Sigma as a Performance Measurement System

Case Study: Data Warehousing, ETL, Business Reporting **TB1**

Module-4 Predictive Analytics: Data Mining (8 hours)

Data Mining: Data Mining Concepts and Applications, Data Mining Applications, Data Mining Process, Data Mining Methods, Data Mining Software Tools, Data Mining Privacy Issues, Myths, and Blunders.

Case Study: Data mining and Prediction applications **TB1**

Module-5 Prescriptive Analytics: Model based Decisions Support and Expert Systems (8 hours)

Model based Decision Making: Decision Support Systems Modeling, Structure off Mathematical Models for Decision Support, Certainty, Uncertainty, and Risk, Management Support Systems, Multiple Goals, Sensitivity Analysis, What-If Analysis, and Goal Seeking.

Expert Systems: Basic Concepts of Expert Systems, Applications of Expert Systems, Structure of Expert Systems, Knowledge Engineering, Problem Areas Suitable for Expert Systems, Development of Expert Systems, Benefits, Limitations, and Critical Success Factors of Expert Systems.

Case Study: Application of expert systems. **TB1**

Course Outcomes: At the end of the course the student will be able to:	
22AIM564.1	Apply the types of data to the Decision Support systems and Business Intelligence framework.
22AIM564.2	Apply the decision making process and DSS concepts in the business applications supporting problem resolution..
22AIM564.3	Analyze the importance of data warehousing and business reporting tools to perform descriptive analytics for business issues in the organizations.
22AIM564.4	Analyze the relevance of data mining based predictions in decision making to perform prescriptive analytics for business decisions in the organizations.
22AIM564.5	Analyze the value of model based and expert systems in the decision making process and also discuss areas suitable for application of expert system.
22AIM564.6	Analyze the influence of technologies & business intelligence in overcoming the issues in various business application cases.

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbooks				
1	Business Intelligence and Analytics: Systems for decision support	Ramesh Sharda, Dursun Delden, Efraim Turban	Pearson Publishers	10 th Edition, 2015
Reference Books				
1	Business Intelligence The Savvy Manager's Guide	David Loshin	Elsevier Publishers	2 nd Edition, 2013
2	Fundamentals of Business Analytics	R N Prasad, Seema Acharya	Wiley Publishers	2 nd Edition, 2016
3	Data Mining Techniques. For Marketing, Sales and Customer Relationship Management	Berry M. & Linoff G	Wiley Publishing Inc	2 nd Edition, 2004
4	Data Science for Business	Foster Provost and Tom Fawcett	O'Reilly Media,Inc	1 st Edition, 2013

Web links and Video Lectures (e-Resources):

- <https://www.youtube.com/watch?v=dn97ux9exbY>
- <https://www.youtube.com/watch?v=N8F7eOqgH8Q>
- <https://www.youtube.com/watch?v=zbcCdoHeS4w>
- <https://www.youtube.com/watch?v=KSJqdMqLQA4>
- https://www.youtube.com/watch?v=jkCCnwvO_fg
- <https://www.youtube.com/watch?v=Yb2KF-sAJh4>
- <https://www.netsuite.com/portal/resource/articles/business-strategy/business-intelligence-examples.shtml>

Course Articulation Matrix

Course Outcomes (COs)	Program Outcomes (POs)													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
22AIM564.1	1								1	2			1	
22AIM564.2	2								1	2			1	
22AIM564.3	2		2		2				1	2			1	
22AIM564.4	2		2						1	2			2	
22AIM564.5	2		2						1	2			2	1
22AIM564.6	2				2				1	2			2	1

1: Low 2: Medium 3: High