

SIPNA COLLEGE OF ENGINEERING & TECHNOLOGY, AMRAVATI

An Autonomous Institute Affiliated to

Sant Gadge Baba Amravati University, Amravati, Maharashtra (India)

(Approved by AICTE, New Delhi and Recognized by DTE, Maharashtra)

(Accredited With 'A+' Grade by NAAC)



Department of Computer Science and Engineering

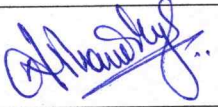
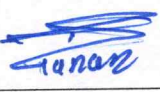

Syllabus for Open Elective

Semester V

Effective from Academic Year 2026-27

Prepared by: Boards of Studies-Computer Science and Engineering

Approved by: Academic Council Sipna COET, Amravati

			30/03/2026	1.00
Chairman Board of Studies	Dean Academics	Chairman Academic Council	Date of Release	Version



Program:	B. Tech. (Computer Science and Engineering)			Semester:	V			
Course:	Fundamentals of Business Analytics			Code:	BTALOE24CS5T			
Teaching Scheme				Evaluation Scheme				
Lecture	Tutorial	Hours	Credit	TA	MSE-I	MSE-II	ESE	Total
2		2	2	10	15	15	60	100
Methods of Teacher Assessment (TA): Class Tests, Assignments, Quiz & Class Attendance								
Course Objectives: To develop the ability to apply business analytics concepts, statistical techniques, and optimization models for data-driven decision-making in organizational contexts.								
Course Outcomes: After completion of the course, the students will be able to:								
CO	Course Outcomes							BT Level
CO-1	Outline the fundamentals of business analytics, its processes, data, technologies, and role in organizational decision-making							L2
CO-2	Apply descriptive, predictive, and prescriptive analytics techniques to analyze and interpret business data.							L3
CO-3	Analyze real-world business problems using an integrated analytics approach involving descriptive, predictive, and prescriptive methods.							L4
CO-4	Develop statistical and linear programming models to support optimal business decisions.							L5

Unit I: Introduction to Business analytics **(6 Hrs.)**
Terminology, Business Analytics Process, Relationship of BA Process and Organization, Decision Making Process, Importance, Business Analytics Data, Business Analytics Technology, Organization Structures
Aligning Business Analytics, Management Issues

Unit II: Types of Business Analytics **(6 Hrs.)**
Introduction to Descriptive Analysis, Visualizing and Exploring Data, Descriptive Statistics, Sampling and Estimation, Probability Distribution, Introduction to Predictive Analysis, Predictive Modelling, Data Mining, Introduction to Prescriptive Analysis, Prescriptive Modelling, Nonlinear Optimization

Unit III: A Final Business Analytics Problem **(6 Hrs.)**
Introduction, Problem Background and Data, Descriptive Analytics Analysis, Predictive Analytics Analysis, Prescriptive Analytics Analysis

Unit IV: Statistical Tools and Linear Programming **(6 Hrs.)**
Introduction Statistical Tools, Counting, Probability Concepts, Probability Distributions, Statistical Testing, Introduction to Linear Programming, Types of Linear Programming Problems/Models, Elements, Formulation Procedure, Computer-Based Solutions for Linear Programming using the Simplex Method, Linear Programming Complications, Necessary Assumptions for Linear Programming Models, Linear Programming Practice Problems

Total: 24 Hrs

Textbooks:

1. "BUSINESS ANALYTICS PRINCIPLES, CONCEPTS, AND APPLICATIONS", by Marc J. Schniederjans, Dara G. Schniederjans, Christopher M. Starkey, Pearson Edition
2. Business Analytics, S. Christian Allright, Wayne L. Winstone

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Academic Council Meeting
Dated:-.....



Reference Books:

1. Fundamentals of Business Analytics – Prasad & Acharya
2. Business Analytics – James R. Evans

MOOC Links:

1. Course Name: Business Intelligence and Analytics

<https://onlinecourses.nptel.ac.in/noc20 mg24/preview>


Approved in.....
Academic Council Meeting
Dated:-.....



Program:	B. Tech. (Computer Science and Engineering)			Semester:	V			
Course:	Fundamentals of Stock Market			Code:	BTALOE25CS5T			
Teaching Scheme				Evaluation Scheme				
Lecture	Tutorial	Hours	Credit	TA	MSE-I	MSE-II	ESE	Total
2	-	2	2	10	15	15	60	100
Methods of Teacher Assessment (TA): Class Tests, Assignments, Quiz & Class Attendance								
Course Objectives: To provide basic knowledge of stock market concepts, trading, investment fundamentals and simple stock data analysis.								
Course Outcomes: After completion of the course, the students will be able to:								
CO	Course Outcomes							BT Level
CO-1	Identify basic stock market terms, instruments, and Indian stock exchanges.							L1
CO-2	Describe trading process, investment types, and risk-return concepts.							L2
CO-3	Analyse basic financial ratios, charts, and market indicators.							L4
CO-4	Evaluate stock data using Excel and make simple portfolio diversification decisions.							L5

Unit 1: Stock Market Basics

(6 Hrs)

What is a Stock Market, Shares, Bonds, Mutual Funds, NSE – National Stock Exchange, BSE – Bombay Stock Exchange, SEBI – Securities and Exchange Board of India, Primary Market vs Secondary Market.

Unit 2: Trading & Investment Fundamentals

(6 Hrs)

Demat Account (Dematerialized Account), Trading Account, Buying/Selling shares, Delivery vs Intraday Trading, Long-term vs Short-term Investment, Basic concept of Risk and Return.

Unit 3: Understanding Market Indicators

(6 Hrs)

Company Basics: Profit, Revenue, Growth, Simple ratios: PE Ratio – Price to Earnings Ratio, EPS – Earnings Per Share, Market Cap – Market Capitalization, Basic charts: Line Chart & Candlestick Chart, Support and Resistance, Moving Average.

Unit 4: Basics of Stock Data Analysis

(6 Hrs)

Stock price data: OHLC – Open, High, Low, Close, Using Excel to open stock data, Simple analysis: Averages, Trend identification, Basic idea of portfolio diversification.

Total: 24 Hrs



Textbooks

1. "Fundamentals of Financial Management" – by *Prasanna Chandra*
2. "Investment Analysis and Portfolio Management" – by *V.K. Bhalla*
3. "Stock Market Investing for Beginners" – by *Tyson Clayton*

Reference Books

1. "Security Analysis and Portfolio Management" – by *Donald E. Fischer & Ronald J. Jordan*
2. "Technical Analysis of the Financial Markets" – by *John J. Murphy*

MOOC Links:

1. Course Name: Financial Markets
https://onlinecourses.nptel.ac.in/noc24_mg20/preview
2. Course Name: Investment Management
https://onlinecourses.nptel.ac.in/noc24_mg34/preview
3. Course Name: Data Analysis for Decision Making
https://onlinecourses.nptel.ac.in/noc24_mg14/preview

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Academic Council Meeting
Dated:- 30/03/2028