

BACHELOR OF ARTS (VS) SMALL AND MEDIUM ENTERPRISES

Bachelor of Arts (VS)- Small and Medium Enterprises

Semester VII

Discipline Specific Course 7.1 – (DSE 7.1)-Business Analytics for MSMEs

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
BUSINESS ANALYTICS FOR MSMEs (DSE 7.1)	4	3	0	1	12th Pass	NIL

Learning Objective: This course aims to equip students: -

- Equip students with knowledge and practical tools of Business Analytics tailored for MSMEs
- Enable learners to understand how data can inform business decisions
- Demonstrate how business analytics contributes to sustainable business growth in MSMEs

Learning Outcomes: After the completion of the course, the learners will be able to:

- Understand the role of Business Analytics in decision-making in MSMEs.
- Apply spreadsheet and R-based tools for data preparation, visualization, and analysis.
- Use statistical and predictive techniques to interpret real-time MSME data.
- Perform text mining and basic reporting relevant to MSME business contexts.

Course Content

(Theory 45 hrs + Practical 30 hrs)

Unit 1

10 Hours

Introduction to Business Analytics for MSMEs: Introduction to Data, Data Analytics, and Data Science. Business Analytics: Concepts, Evolution, and Application in MSMEs. Types of Analytics: Descriptive, Diagnostic, Predictive, and Prescriptive. Types of Data: Nominal, Ordinal, Interval, Ratio. Big Data and Business Intelligence in MSME context. Challenges and Opportunities in adopting Analytics for MSMEs.

Unit 2 **11 hours**

Data Analysis and Visualization: Data Cleaning and Preparation for MSMEs using Excel/Google sheets. Using Spreadsheet functions: Sort, Filter, Conditional Formatting, Text to Columns. Detecting Duplicates, Outliers, Missing Values. Visual Representation: Line graphs, Bar charts, Scatter plots, Histograms, Boxplots, Tree maps. Interactive Dashboards for MSME reports. Descriptive Statistics in excel: Central Tendency, Dispersion.

Unit 3 **12 hours**

Business Analytics Using R: Getting Started with R: Installation, RStudio, R Packages. R Syntax, Data Structures: Vectors, Lists, Data Frames, Matrices. Importing and Exporting Data: Excel, CSV, Web Data. Descriptive Analytics using R: Charts, Summary Stats, Tables. Case study: MSME data analysis using R

Unit 4 **12 hours**

Predictive Analytics and Textual Analysis for MSMEs: Regression Analysis (Simple & Multiple Linear Regression). Confidence Intervals, Significance Testing. Understanding Regression Coefficients, Heteroscedasticity, Multicollinearity. Introduction to Textual Analytics: Text Mining, Word Frequency. Sentiment Analysis for customer feedback in MSMEs. Using R for Text Analysis. Applications in marketing, customer service, and operations in MSMEs

Practical Exercises

Students are expected to perform hands-on tasks such as:

1. Data cleaning, summarization and visualization using spreadsheets (Power Query, Power Pivot, Charts, Dashboards).
2. Loading and preparing data in R; analysing data sets relevant to MSME sectors (sales, cost, inventory).
3. Building and interpreting regression models.
4. Conducting basic sentiment analysis on MSME customer reviews or social media feedback.
5. Designing dashboards or automated report templates for MSME decision-makers.

Suggested Readings

Dangi, H.K., Sharma, H., & Madan, M. (2023). Business Analytics. Cengage Learning India Pvt. Ltd

Gupta, Ruchi. (2021). Business Analytics: Concepts and Applications. Taxmann Publications Pvt. Ltd.

Kumar, U. Dinesh. (2017). Business Analytics: The Science of Data-Driven Decision Making. Wiley India Pvt. Ltd.

Vohra, N. D. – Business Statistics, McGraw Hill (for spreadsheet and regression techniques).

Singh, S.P. & Wadhwa, Pooja. (2022). Data Analytics. Vikas Publishing House.

Additional Readings and Resources

MSME Directorate (Govt. of India) – Case studies, reports, and data sources.

Government of India MSME Reports and Databases (<https://msme.gov.in>)

Websites like Kaggle, UCI Machine Learning Repository (for MSME-related datasets)

E-journals: International Journal of Business Analytics, Journal of Small Business Management

Online Courses: Coursera, edX (on R, Excel, Business Analytics)