



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav School of Management
Choice Based Credit System (CBCS) in Light of NEP-2020

GENERIC ELECTIVE (EVEN SEMESTER)

GUMGT205 BUSINESS STATISTICS- I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
GUMGT205	GE	Business Statistics- I	60	20	20	-	-	4	-	-	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; GE – Generic Elective

***Teacher Assessment** shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives

1. To acquaint the students with basic statistical tools used in management.
2. To guide students about the importance and utility of Statistics in Business.

Examination Scheme

The internal assessment of the students' performance will be done out of 40 Marks. The semester Examination will be worth 60 Marks. The question paper and semester exam will consist of two sections A and B. Section A will carry 36 Marks and consist of five questions, out of which student will be required to attempt any three questions. Section B will comprise of one or more cases / problems worth 24 marks.

Course Outcomes

1. Demonstrate understanding of basic statistical concepts.
2. Structure business problems in a mathematical form
3. Apply the statistical concepts learnt to other business concepts and
4. Validate mathematical/statistical statements relating to economics, business and finance.

COURSE CONTENT

Unit I Introduction to Statistics

1. Statistics: Definition and scope. Concepts of statistical population and sample.
2. Classification of Data: quantitative and qualitative, cross-sectional and time-series, discrete and continuous.
3. Scales of measurement: nominal, ordinal, interval, and ratio. Presentation of Data: tabular and graphical.
4. Frequency distributions, cumulative frequency distributions and their graphical representations. Stem and leaf displays.

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Unit II: Univariate Data Analysis

1. Measures of Central Tendency: Mean, Median, Mode.
2. Measures of Dispersion: Range, Mean deviation, Standard deviation, Coefficient of variation, Gini's Coefficient, Lorenz Curve.
3. Moments, skewness, and kurtosis. Quantiles and measures based on them.
4. Box Plot. Outliers. Chebyshev's inequality, normal data sets.

Unit III Bivariate Data Analysis

1. Bivariate data: Definition, scatter diagram, simple correlation, linear regression,
2. Principle of least squares, fitting of polynomial and exponential curves,
3. Correlation Ratio, Correlation Index, Intraclass Correlation.
4. Rank correlation – Spearman's and Kendall's measures.

Unit IV Multivariate Data Analysis

1. Analysis of Categorical Data: Contingency table, independence, and association of attributes,
2. Measures of Association - odds ratio, Pearson's, and Yule's measure,
3. Multivariate Frequencies, Multivariate Data Visualization, mean vector and dispersion matrix,
4. Multiple linear regression, multiple and partial correlation coefficients. Residual error variance

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Unit V Reporting

1. Index Numbers: Definition, construction of index numbers and problems thereof for weighted and unweighted index numbers including Laspeyre's, Paasche's, Edgeworth-Marshall, and Fisher's.
2. Chain index numbers, conversion of fixed based to chain-based index numbers and vice-versa.
3. Consumer price index numbers.
4. Basic of Report Writing, Format of Report Writing.

Suggested Readings

1. Richard Levin & David S. Rubin (2012): Statistics for Management, 7th Edition, Pearson.
2. Sharma, JK (2012): Business statistics, Second Edition- Pearson Education.
3. Field, Andy (2013): Discovering statistics using IBM SPSS statistics ,4th Edition, SAGE Publications.
4. Goon, A.M., Gupta, M.K. and Dasgupta, B. (2002): Fundamentals of Statistics, Vol. I& II, 8th Edn. The World Press, Kolkata.
5. Miller, Irwin, and Miller, Marylees (2006): John E. Freund's Mathematical Statistics with Applications, (7th Edn.), Pearson Education, Asia.
6. Mood, A.M., Graybill, F.A. and Boes, D.C. (2007): Introduction to the Theory of Statistics, 3rd Edn. (Reprint), Tata McGraw-Hill Pub. Co. Ltd.
7. Tukey, J.W. (1977): Exploratory Data Analysis, Addison-Wesley Publishing Co.
8. Agresti, A. (2010): Analysis of Ordinal Categorical Data, 2nd Edition, Wiley.
9. Freedman, D., Pisani, R. and Purves, R. (2014): Statistics, 4th Edition, W. W. Norton & Company. K.V.S. Sarma: Statistics made simple: do it yourself on PC. PHI

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