



M.Sc. (QPM)
Semester – I

Course Code	PS01CQPM21	Title of the Course	Business Statistics and Information Systems
Total Credits of the Course	4	Hours per Week	4

Main Focus of the Course outcomes	Employability	Skill Development	Entrepreneurship
	✓	✓	
Course Objective:	Introduce descriptive and inferential statistical methods useful in solving problems in corporates and businesses.		

Course Content		
Unit	Description	Weightage (in %)
I	Types of Data: Concepts of a statistical population and sample from a population; qualitative and quantitative data; nominal and ordinal data; cross sectional and time series data; discrete and continuous data; frequency and non- frequency data. Different types of scales - nominal, ordinal, ratio and interval. Diagrammatic and graphical representation of grouped data. Frequency distributions, cumulative frequency distributions and their graphical representation, histogram, frequency polygon and ogives.	25
II	Measures of central tendency: Criteria for good measures of central tendency, Arithmetic Mean, Geometric Mean and Harmonic Mean, Median and Mode for raw and grouped data. Quantiles, Deciles and Percentiles for row and grouped data. Measures of Dispersion: Concept of dispersion, Absolute and relative measure of dispersion, Range, absolute mean deviation, variance, standard deviation, coefficient of variation, Quartile Deviation, Coefficient of quartile deviation.	25
III	Probability: Deterministic and Random Experiments. Simple and Compound Events, Sample Space. Union and Intersection of events, mutually exclusive events, Mathematical and Statistical Definition of Probability, Some important results on probability, Null and Sure Event, Independent Events.	25





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	Conditional Probability, Bayes' Theorem. Probability Distribution: Bernoulli, Binomial, Geometric and Negative Binomial and Poisson distribution and their important properties. Normal and Exponential Distribution and their properties.	
IV	Correlation: Concept of correlation, positive & negative correlation, Scatter Diagram, Karl Pearson's Coefficient of correlation and its properties. Coefficient of determination Regression: Concepts of error in regression, Fitting of linear regression Testing of hypotheses: Definition of null and alternative hypotheses; two type errors, level significance and p-value. One sample problem: Z, t and chi-square tests. Two sample problem: F-test, Independent sample t-test and paired t-test.	25

Teaching-Learning Methodology	Interactive Class Lectures, ICT tools used
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Know and understand the different types of data and manage raw data effectively.
2.	Construct visual representations of statistical data with general appropriation.
3.	Able to compute conditional probability and apply the Bayes' Theorem.
4.	Study and fit bi-variate relationships.





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5.	Use various tests of hypothesis to prove or disprove a statement of business concepts.
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Suggested References:

Sr. No.	References
1.	G. V. Shenoy and U. K. Srivastava (1988) <i>Business Statistics</i> , New Age International.
2.	Douglas Downing and Jeffrey Clark (2010) <i>Business Statistics</i> , Barron's Educational Series.
3.	David R Anderson, Dennis J. Sweeney, Thomas A. Williams (2008) <i>Essentials of Statistics for Business and Economics</i> , Cengage Learning.
4.	Donald Waters (2011) <i>Quantitative Methods for Business</i> , Pearson.
5.	Richard Levin and David Rubin (1997) <i>Statistics for Management</i> , 7th Ed., Pearson.
6.	John Buglear (2011) <i>Quantitative Methods for Business and Management</i> , Pearson.
7.	B L Agarwal (2006) <i>Basic Statistics</i> , New Age International.

