

KRANTIGURU SHYAMJI KRUSHNA VERMA KACHCHH UNIVERSITY										
FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE)										
Programme		Bachelor of Arts				Branch/Spec.		BA Statistics		
Semester		V (Five)				Version/Pattern		NEP 2020		
Effective from Academic Year				2023-24		Effective for the batch Admitted in				2024-25
Subject Code		MNST - 501		Subject Name		STATISTICAL METHODS				
Teaching scheme						Examination scheme (Marks)				
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total	
	L	TU	P	TW						
Credit	4	-	-		4	Theory	50	50	100	
Hours	4	-	-	-	4	Practical	-	-	-	
Pre-requisites:										
❖ The learners should have some basic skills with minimal prior statistical knowledge.										
Learning Outcome:										
❖ After successfully completing this course, the learner will be										
• equipped with the statistical knowledge and skills necessary to conduct basic data analysis. • interpret research findings, and contribute effectively to evidence-based research and policy making in their respective fields. • prepared to apply statistical reasoning and methodologies to address research questions and challenges in their academic and professional pursuits										
Theory Syllabus										
Unit		Content							Hours	
1		Index Number ➤ Definition, Meaning, Characteristics and Uses. ➤ Base Year: 1. Fixed Base Method 2. Chain Base Method ➤ Index Number based on: 1. Weighted Average 2. Laspeyre's Formula 3. Paasche's Formula 4. Fisher's Formula ➤ Cost of Living Index Number: 1. Total Expenditure Method 2. Family Budget Method							15	
2		Linear Correlation ➤ Introduction, Meaning and Definition. ➤ Properties and interpretation of Correlation Coefficient. ➤ Methods of Correlation: 1. Scatter Diagram Method 2. Karl Pearson's Product Moment Method 3. Spearman Ranks Correlation Method							15	
3		Linear Regression ➤ Introduction and Uses. ➤ Linear Regression Model. ➤ Fitting of Regression Line by: 1. Scatter Diagram Method 2. Least Squares Method (Y on X only) ➤ Properties and interpretation of Regression Coefficient.							15	
4		Time Series ➤ Introduction, Meaning and Definition. ➤ Importance, Uses and Components. ➤ Methods of Measuring Trend by: 1. Graphical Method 2. Least Squares Method 3. Moving Average Method							15	
Reference Books										
1		Business Statistics by J. K. Sharma, Pearson India Pvt Ltd, Chennai.								
2		Statistical Methods by S. P. Gupta, Sultan Chand & Sons, New Delhi.								
3		Programmed Statistics by B. L. Agarwal, New Age Int. Publishers, New Delhi.								
4		Comprehensive Statistical Methods by Arora's, S. Chand & Co. Ltd, New Delhi.								
5		Fundamentals of Statistics by S. C. Gupta, Himalaya Publishing House, Mumbai.								



KRANTIGURU SHYAMJI KRUSHNA VERMA KACHCHH UNIVERSITY
BHUJ - Kachchh
270001



MODE OF EVALUATION:

Evaluation will be divided in two parts.

- **Internal:** Internal Evaluation of 50 marks will be decided by the department of colleges or Institutes as per the instruction given by the University from time to time.
- **External:** Semester end Examination will be conducted by the University for 50 Marks.

The Demonstrative Structure of the University Question Paper is as follows.

Q. No.	Question Type	Unit	Marks
1	Two Short Questions (5 marks for each) OR One Long Question (10 marks)	I	10
2	Two Short Questions (5 marks for each) OR One Long Question (10 marks)	II	10
3	Two Short Questions (5 marks for each) OR One Long Question (10 marks)	III	10
4	Two Short Questions (5 marks for each) OR One Long Question (10 marks)	IV	10
5	Either Objective Type Questions: Like MCQ, True False, Fill in the Blanks, Make Matching, One-Line Answer etc. Attempt any 10 out of 12 (1 mark for each) OR Very Short Type Questions: Attempt any 5 out of 8 (2 mark for each)	I to IV	10
Total			50

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FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE)									
Programme		Bachelor of Arts				Branch/Spec.		BA Statistics	
Semester		V (Five)				Version/Pattern		NEP 2020	
Effective from Academic Year				2023-24		Effective for the batch Admitted in			2024-25
Subject Code		MNST - 502		Subject Name		APPLIED STATISTICS			
Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	4	-	-		4	Theory	50	50	100
Hours	4	-	-	-	4	Practical	-	-	-
Pre-requisites:									
❖ The learners should have basic understanding of data with minimal prior statistical knowledge.									
Learning Outcome:									
❖ After successfully completing this course, the learner will									
• have a solid understanding of the fundamental concepts of probability. • be able to define and analyse discrete random variables. • have basic knowledge of tool requires for analysing the probability and its distributions. • understand the concept of probability mass function.									
Theory Syllabus									
Unit	Content								Hours
1	Probability ➤ Introduction and Basic Terminology. ➤ Events and its Types. ➤ Law of Addition and Law of Multiplication. ➤ Conditional Probability (Theory only). ➤ Related Examples.								15
2	Mathematical Expectation ➤ Introduction. ➤ Expected Value and Variance of a random variable. ➤ Properties of Expected Value and Variance. ➤ Related Examples.								15
3	Binomial Distribution ➤ Introduction. ➤ Properties and Uses. ➤ Related Examples.								15
4	Poisson Distribution ➤ Introduction. ➤ Properties and Uses. ➤ Related Examples.								15
Reference Books									
1	Business Statistics by J. K. Sharma, Pearson India Pvt Ltd, Chennai.								
2	Statistical Methods by S. P. Gupta, Sultan Chand & Sons, New Delhi.								
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Total			50

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FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE)									
Programme		Bachelor of Arts				Branch/Spec.		BA Statistics	
Semester		VI (Six)				Version/Pattern		NEP 2020	
Effective from Academic Year				2023-24		Effective for the batch Admitted in			2024-25
Subject Code		MNST - 601		Subject Name		BUSINESS STATISTICS			
Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	4	-	-		4	Theory	50	50	100
Hours	4	-	-	-	4	Practical	-	-	-
Pre-requisites:									
❖ The learners should have basic knowledge of Probability and Statistics for easy understanding.									
Learning Outcome:									
❖ After successfully completing this course, the learner will be									
• with practical skills for data analysis and quality management in industrial contexts. • proficient in using statistical tools such as control charts to monitor and maintain process stability and apply corrective actions to ensure consistent quality in production. • able to use various decision theory techniques and interpret the results obtained. • capable to solve the game with or without saddle point and empowers the decision skills.									
Theory Syllabus									
Unit	Content								Hours
1	Statistical Quality Control – I (Charts for Variables) ➤ Introduction, Uses and Objectives. ➤ Variation in Quality. ➤ Theory of Control Charts and Theory of Runs. ➤ Specification Limits, Process Limits and Revised Limits. ➤ Examples based on $\bar{x}$ and R Chart.								15
2	Statistical Quality Control – II (Charts for Attributes) ➤ Introduction and Uses. ➤ Difference Between Variable and Attribute Charts. ➤ Examples based on p, np and C Chart.								15
3	Decision Theory ➤ Introduction and Elements. ➤ Methods of Decision Making under Uncertainty. 1. When Probabilities are not known – (i) Maxi-Min (ii) Maxi-Max (iii) Hurwicz (iv) Laplace & (v) Mini-Max Regret Principle 2. When Probabilities are given – (i) EMV (ii) EOL & (iii) EVPI ➤ Related Examples.								15
4	Game Theory ➤ Introduction and Assumptions. ➤ Two Person Zero Sum Game. ➤ Saddle Point and Dominance Rule. ➤ Related Examples.								15
Reference Books									
1	Statistical Methods by S. P. Gupta, Sultan Chand & Sons, New Delhi.								
2	Business Statistics by S. C. Gupta, Himalaya Publishing House, Mumbai.								
3	Operations Research by J. K. Sharma, Macmillan Publishers India Ltd, Noida.								
4	Comprehensive Statistical Methods by Arora's, S. Chand & Co. Ltd, New Delhi.								
5	Operations Research by P. Rama Murthy, New Age International (P) Ltd. Publishers, New Delhi.								



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