KRANTIGURU SHYAMJI KRUSHNA VERMA KACHCHH UNIVERSITY FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE) Branch/Spec. **BA Statistics** Bachelor of Arts Programme Version/Pattern **NEP 2020** Semester I (One) Effective for the batch Admitted in 2024-25 Effective from Academic Year 2023-24 DSCM - 101 Subject Name FUNDAMENTALS OF STATISTICS - I Subject Code Examination scheme (Marks) Teaching scheme SEE Total Total CE Lecture (DT) Practical (Lab.) (Per week) P TW L TU 50 50 100 4 4 Theory Credit 4 4 Practical Hours

Pre-requisites:

The learners should have basic understanding of data and should have a logical thinking.

Learning Outcome:

- ❖ After successfully completing this course, the student will be able to perform the following tasks very easily.
 - Will be able to understand the meaning and importance of Statistics in research.
 - Become able to apply the data collection methods and to carryout various surveys independently.
 - Learn to classify and tabulate the data and will be able to interpret it.

Will become capable to represent the data in diagrammatic and graphical form.

Unit	ry Syllabus Content	Hours					
1	Statistics: An Introduction	15					
	> Origin and Growth.						
	Meaning and Definitions.						
	> Functions, Uses and Limitations.	4=					
2	Collection of Data	15					
	Population and Sample.						
	Quantitative and Qualitative data.						
	Primary and Secondary Data.						
	Methods of collecting Primary data.						
	Sources of Secondary data.						
3	Classification and Tabulation of Data	15					
	Meaning and Basic terminologies.						
	> Types of Classification.						
	> Types of Tabulation.						
	➤ Simple Examples.						
4	Diagrams and Graphs	15					
	> Importance, Limitations and types of diagram.						
	> Importance, Limitations and types of Graph.						
	➤ Simple Examples.						
Refer	ence (APA Style)						
1	Business Statistics by J. K. Sharma, Pearson India Pvt Ltd, Chennai.						
2	Statistical Methods by S. P. Gupta, Sultan Chand & Sons, New Delhi.						
	Business Statistics by S. C. Gupta, Himalaya Publishing House, Mumbai.						
4	Programmed Statistics by B. L. Agarwal, New Age Int. Publishers, New Delhi.						
5	Comprehensive Statistical Methods by Arora's, S. Chand & Co. Ltd, New Delhi						



KRANTIGURU SHYAMJI KRUSHNA VERMA KACHCHH UNIVERSITY FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE) Branch/Spec. **BA Statistics** Bachelor of Arts Programme Version/Pattern **NEP 2020** I (One) Semester Effective for the batch Admitted in 2024-25 Effective from Academic Year 2023-24 Subject Name MATHEMATICAL STATISTICS - I Subject Code DSCM - 102 Examination scheme (Marks) Teaching scheme Practical (Lab.) SEE Total CE (Per week) Lecture (DT) Total TU TW L 50 100 4 Theory 50 4 Credit Practical 4 4 Hours Pre-requisites: The learners should have basic knowledge of mathematics up to high school level. Learning Outcome: The course outcomes of Mathematical Statistics aim to prepare students for rigorous data analysis, research and decision-making across various domains. After successful completion of the course, the students should be well equipped to apply statistical reasoning and methodologies to the real life problems and contributes to evidence based practices in their respective fields. Theory Syllabus Hours Content Unit 15 **Function** 1 > Introduction and Definition Domain, Codomain and Range. > Notation and Types of Function. > Equal and Real Function. 15 2 Limits > Introduction. > Limit of a Function. Working Rules of Limit. > Standard Forms of Limit. **Arithmetic Progression** 15 3 > Sequence and Series. > Introduction of AP. > nth Term of an AP. Sum of First n Terms of AP. **Geometric Progression** 15 4 > Introduction. > nth Term of a GP. > Sum of First n Terms of GP. Reference (APA Style) Business Mathematics by V. K. Kapoor, Sultan Chand & Sons, New Delhi. 1 Mathematics by V. P. Jaggi & A. B. Mathur, Sultan Chand & Sons, New Delhi. 2 Elementary Pure Mathematics by J. D. Hodson, MacMillan & Co. Ltd. London. 3



Principles of Mathematics by C. B. Allendoerfer & C. O. Oakley, McGraw-Hill, NY.

Mathematics and Statistics for Economics by G. S. Monga, Vikas Publishing House Pvt Ltd,

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Sahibabad (UP).

KRANTIGURU SHYAMJI KRUSHNA VERMA KACHCHH UNIVERSITY FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE) Branch/Spec. **BA Statistics** Bachelor of Arts Programme Version/Pattern NEP 2020 Semester I (One) Effective for the batch Admitted in Effective from Academic Year 2023-24 2024-25 FUNDAMENTALS OF STATISTICS – I Subject Code MI - 101 Subject Name Examination scheme (Marks) Teaching scheme Lecture (DT) Practical (Lab.) Total CE SEE Total (Per week) TU P TW L 4 Theory 50 50 100 Credit 4 4 Practical 4 Hours Pre-requisites:

The learners should have basic understanding of data and should have a logical thinking.

Learning Outcome:

- ❖ After successfully completing this course, the student will be able to perform the following tasks very easily.
 - Will be able to understand the meaning and importance of Statistics in research.
 - Become able to apply the data collection methods and to carryout various surveys independently.
 - Learn to classify and tabulate the data and will be able to interpret it.
 - Will become capable to represent the data in diagrammatic and graphical form.

Unit	Content	Hours					
1	Statistics: An Introduction						
	> Origin and Growth.						
	➤ Meaning and Definitions.						
	> Functions, Uses and Limitations.						
2	Collection of Data	15					
	Population and Sample.						
	Quantitative and Qualitative data.						
	Primary and Secondary Data.						
	➤ Methods of collecting Primary data.						
	➤ Sources of Secondary data.						
3	Classification and Tabulation of Data	15					
	Meaning and Basic terminologies.						
	> Types of Classification.						
	> Types of Tabulation.						
	➤ Simple Examples.						
4	Diagrams and Graphs	15					
	> Importance, Limitations and types of diagram.						
	> Importance, Limitations and types of Graph.						
	➤ Simple Examples.						
Refer	ence (APA Style)						
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	Business Statistics by S. C. Gupta, Himalaya Publishing House, Mumbai.						
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	Comprehensive Statistical Methods by Arora's, S. Chand & Co. Ltd, New Delhi.						



KRANTIGURU SHYAMJI KRUSHNA VERMA KACHCHH UNIVERSITY FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE) Branch/Spec. **BA Statistics** Bachelor of Arts Programme Version/Pattern **NEP 2020** Semester I (One) Effective from Academic Year 2023-24 Effective for the batch Admitted in 2024-25 Subject Name **MATHEMATICAL STATISTICS – I** Subject Code MD - 101 Teaching scheme Examination scheme (Marks) (Per week) Lecture (DT) Practical (Lab.) Total CE SEE Total L TU P TW 4 4 Theory 50 50 100 Credit 4 Practical 4 Hours Pre-requisites: The learners should have basic knowledge of mathematics up to high school level. Learning Outcome: * The course outcomes of Mathematical Statistics aim to prepare students for rigorous data analysis, research and decision-making across various domains. After successful completion of the course, the students should be well equipped to apply statistical reasoning and methodologies to the real life problems and contributes to evidence based practices in their respective fields. Theory Syllabus Hours Unit Content 15 1 **Function** > Introduction and Definition > Domain, Codomain and Range. > Notation and Types of Function. > Equal and Real Function. 2 15 Limits > Introduction. ➤ Limit of a Function. > Working Rules of Limit. > Standard Forms of Limit. **Arithmetic Progression** 15 3 > Sequence and Series. > Introduction of AP. > nth Term of an AP. > Sum of First n Terms of AP. **Geometric Progression** 15 4 > Introduction. > nth Term of a GP. > Sum of First n Terms of GP. Reference (APA Style) Business Mathematics by V. K. Kapoor, Sultan Chand & Sons, New Delhi. 1 Mathematics by V. P. Jaggi & A. B. Mathur, Sultan Chand & Sons, New Delhi. 2 Elementary Pure Mathematics by J. D. Hodson, MacMillan & Co. Ltd. London. 3



Mathematics and Statistics for Economics by G. S. Monga, Vikas Publishing House Pvt Ltd,

Principles of Mathematics by C. B. Allendoerfer & C. O. Oakley, McGraw-Hill, NY.

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Sahibabad (UP).

KRANTIGURU SHYAMJI KRUSHNA VERMA KACHCHH UNIVERSITY FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE) Programme Bachelor of Arts Branch/Spec. **BA Statistics** II (Two) Version/Pattern Semester **NEP 2020** Effective from Academic Year 2023-24 Effective for the batch Admitted in 2024-25 DSCM - 201 Subject Name FUNDAMENTALS OF STATISTICS - II Subject Code Teaching scheme Examination scheme (Marks) (Per week) Lecture (DT) Practical (Lab.) Total CE SEE Total L TU TW Credit 4 4 Theory 50 50 100 Hours 4 4 Practical

Pre-requisites:

The learners should have basic understanding of data and should have a logical thinking.

Learning Outcome:

- After successfully completing this course, the student will be able to perform the following tasks very easily.
 - Will be an enough understanding between sample and population.
 - Easily identify and select appropriate sampling methods.
 - Become familiar with the basic techniques of central tendency.
 - Able to analyse and interpret the results of various measures of central tendency.
 - Will able to use the various measures of central tendency.

Unit	Content	Hours					
1	Sampling Methods						
	Meaning of Population and Sample.	15					
	Population Inquiry and Sample Inquiry.						
	Need of Sampling and Size of a Sample.						
	Characteristics of a good Sample.						
	Methods for Sampling.						
2	Measure of Central Tendency - 1	15					
	Meaning of Central Tendency.						
	Characteristics of a Good Measure.						
	Arithmetic Mean (Simple Mean).						
	Combined, Weighted and Geometric Mean.						
	Advantages and Disadvantages of Mean.						
3	Measure of Central Tendency - 2	15					
	Introduction to Measures of Positional Averages.						
	Median, Quartiles and Deciles.						
	Percentiles and Percentile Rank.						
	Advantages and Disadvantages of Median.						
4	Measure of Central Tendency - 3	15					
	Introduction and Meaning of Mode.						
	Empirical formula for finding Mode.						
	Graphical Method for finding Mode.						
	Advantages and Disadvantages of Mode.						
	Comparative study of Mean, Median and Mode.						
Referen	nce (APA Style)						
1 B	Business Statistics by J. K. Sharma, Pearson India Pvt Ltd, Chennai.						
	Statistical Methods by S. P. Gupta, Sultan Chand & Sons, New Delhi.						
	Business Statistics by S. C. Gupta, Himalaya Publishing House, Mumbai.						
4 P	Programmed Statistics by B. L. Agarwal, New Age Int. Publishers, New Delhi.						



KRANTIGURU SHYAMJI KRUSHNA VERMA KACHCHH UNIVERSITY FACULTY OF SOCIAL SCIENCE AND HUMANITIES (DOE) Branch/Spec. Bachelor of Arts **BA Statistics** Programme II (Two) Version/Pattern NEP 2020 Semester Effective from Academic Year 2023-24 Effective for the batch Admitted in 2024-25 Subject Name MATHEMATICAL STATISTICS - II Subject Code DSCM - 202 Teaching scheme Examination scheme (Marks) (Per week) Lecture (DT) Practical (Lab.) Total CE SEE Total L TU P TW4 4 Theory 50 Credit 50 100 Hours 4 4 Practical

Pre-requisites:

Learning Outcome:

* The course outcomes of Mathematical Statistics aim to prepare students for rigorous data analysis, research and decision-making across various domains. After successful completion of the course, the students should be well equipped to apply statistical reasoning and methodologies to the real life problems and contributes to evidence based practices in their respective fields.

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Theory	VI	Hahne	
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Unit	Content	Hours				
1	Determinant					
	Meaning and Definition.					
	\triangleright Order 2 x 2 and 3 x 3.					
	Properties (Rules).					
	Minors and Co-factors.					
	Cramer's Rule.					
	> Examples.					
2	Matrix	15				
	Meaning and Definition.					
	> Types of Matrices.					
	Operations on Matrices.					
	Adjoint and Inverse.					
	> Examples.					
3	Permutation	15				
1	Meaning and Formula.					
	Permutations of Different Things.					
	Permutations of Similar Things.					
	Circular Permutation.					
	Examples.					
4	Combination	15				
	Meaning and Formula.					
	Combination of things taken some or all at a time.					
	Some Restricted Combinations.					
	Examples.					

Reference (APA Style)

- Business Mathematics by V. K. Kapoor, Sultan Chand & Sons, New Delhi.
- Mathematics by V. P. Jaggi & A. B. Mathur, Sultan Chand & Sons, New Delhi. 2
- 3 Elementary Pure Mathematics by J. D. Hodson, MacMillan & Co. Ltd. London.
- 4 Principles of Mathematics by C. B. Allendoerfer & C. O. Oakley, McGraw-Hill, NY.
- 5 Mathematics & Statistics for Economics by G. S. Monga, Vikas Publishing House P.Ltd, Sahibabad (UP).



The learners should have basic knowledge of mathematics up to high school level.

TIG	URU SI	HYAN	AJI KRUS	SHNA	VERMA I	KACI	HCHH UNIVE	RSITY
F.	ACULT	Y OF	SOCIAL S	CIENC	E AND HU	MAN]	TIES (DOE)	
Programme Bachelor of Arts					Branch/Spec. BA Statistics			
	II (Two)			Version/Pattern NEP 2020			
Effective from Academic Year					Effective for the batch Admitted in 2024			2024-25
Subject Code MI - 201 Subject N				ame	FUNDAMENTALS OF STATISTICS – II			
]	Teaching	schem	9		E	xamina	ation scheme (Mai	rks)
Lectu	re (DT)	Pract	ical (Lab.)	Total		CE	SEE	Total
L	TU	P	TW					
4	-		-	4	Theory	50	50	100
4	-	- 1	_	4	Practical	-	-	_
֡	F. om Acaee	FACULT Bachelo II (Two) om Academic You e MI - 20 Teaching Lecture (DT) L TU 4 -	FACULTY OF Bachelor of An II (Two) om Academic Year e MI - 201 Teaching scheme Lecture (DT) Pract L TU P 4 -	FACULTY OF SOCIAL SO Bachelor of Arts II (Two) om Academic Year e MI - 201 Subject Note Teaching scheme Lecture (DT) Practical (Lab.) L TU P TW 4	Bachelor of Arts	FACULTY OF SOCIAL SCIENCE AND HU Bachelor of Arts Branch/Spe II (Two) Version/Pa om Academic Year 2023-24 Effective for Subject Name FUNDAM Teaching scheme FUNDAM Lecture (DT) Practical (Lab.) Total L TU P TW 4 - 4 Theory	FACULTY OF SOCIAL SCIENCE AND HUMANI Bachelor of Arts Branch/Spec. II (Two) Version/Pattern om Academic Year 2023-24 Effective for the best Examinated	II (Two) The MI - 201 Subject Name Teaching scheme Lecture (DT) Practical (Lab.) Total Letter (DT) Practical (Lab.) Total Total CE SEE L TU P TW 4 - 4 Theory 50 50

Pre-requisites:

The learners should have basic understanding of data and should have a logical thinking.

Learning Outcome:

- ❖ After successfully completing this course, the student will be able to perform the following tasks very easily.
 - Will be an enough understanding between sample and population.
 - Easily identify and select appropriate sampling methods.
 - Become familiar with the basic techniques of central tendency.
 - Able to analyse and interpret the results of various measures of central tendency.

• Will able to use the various measures of central tendency.

Unit	Content	Hours					
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	➤ Meaning of Population and Sample.						
	Population Inquiry and Sample Inquiry.						
	Need of Sampling and Size of a Sample.						
	➤ Characteristics of a good Sample.						
	➤ Methods for Sampling.						
2	Measure of Central Tendency - 1	15					
	➤ Meaning of Central Tendency.						
	Characteristics of a Good Measure.						
	> Arithmetic Mean (Simple Mean).						
	Combined, Weighted and Geometric Mean.						
	Advantages and Disadvantages of Mean.						
3	Measure of Central Tendency - 2	15					
	➤ Introduction to Measures of Positional Averages.						
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	Percentiles and Percentile Rank.						
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	> Introduction and Meaning of Mode.						
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5	Comprehensive Statistical Methods by Arora's, S. Chand & Co. Ltd, New Delhi.						



	F.	ACULT	Y OF	SOCIAL S	CIENC	E AND HU	MAN]	TIES (DOE)	
Programme		Bachelo	r of Ar	ts		Branch/Spec. BA Statistics		BA Statistics	
Semester II (Two)						Version/Pattern NEP 2020			
Effective fro	demic Y	2023-24		Effective for the batch Admitted in 2024-					
Subject Code MD - 201				Subject N	ame	MATHEMATICAL STATISTICS – II			S – II
	7	Teaching	scheme	9		E	xamina	ation scheme (Ma	rks)
(Per week) Lect		re (DT)	Pract	ical (Lab.)	Total		CE	SEE	Total
	L	TU	P	TW					
Credit	4	-			4	Theory	50	50	100
Hours	4	-	-	-	4	Practical	_	-	-
Pre-requisite	es:					W. A. L.			

The learners should have basic knowledge of mathematics up to high school level.

Learning Outcome:

❖ The course outcomes of Mathematical Statistics aim to prepare students for rigorous data analysis, research and decision-making across various domains. After successful completion of the course, the students should be well equipped to apply statistical reasoning and methodologies to the real life problems and contributes to evidence based practices in their respective fields.

Unit	Content	Hours					
1	Determinant						
	Meaning and Definition.	15					
	➤ Order 2 x 2 and 3 x 3.						
	Properties (Rules).						
	➤ Minors and Co-factors.						
	➤ Cramer's Rule.						
	Examples.						
2	Matrix	15					
	Meaning and Definition.						
	> Types of Matrices.						
	Operations on Matrices.						
	Adjoint and Inverse.						
	> Examples.						
3	Permutation	15					
	Meaning and Formula.						
	Permutations of Different Things.						
	> Permutations of Similar Things.						
	Circular Permutation.						
	> Examples.						
4	Combination	15					
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	Combination of things taken some or all at a time.						
	Some Restricted Combinations.						
	Examples.						

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- 2 | Mathematics by V. P. Jaggi & A. B. Mathur, Sultan Chand & Sons, New Delhi.
- 3 | Elementary Pure Mathematics by J. D. Hodson, MacMillan & Co. Ltd. London.
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