2. Statistical Methods for Research in Social Sciences and Humanities (Basics)

Course Name	**Statistical Methods for Research in Social Sciences and Humanities (Basics)**					
Type of Course	Open Course					
Course Code	KNM21O02					
Course Summary & Justification	This course is designed to impart training in statistical methods required for research in Social Science/ Humanities. Topics are so designed in such a way that even students who have no primary knowledge of Statistics can understand the basic theory and procedures involved. The course starts with the basic ideas relating to social science research (Unit I). Then it goes to sampling design and different methods of sampling (Unit II). Unit III is devoted for the presentation of data. Study about various descriptive measures are included in unit IV. Use of relevant soft- wares is the concern of the last unit					
Semester	3		**Credit**		4	
Total Student Learning Time (SLT)	Learning Approach	Lecture	Tutorial	Practical	Others	Total Learning Hours
	Authentic learning Collaborative learning Case based learning	64	6	6	4	80
Pre-requisite	NIL As per the requirement of the course					
Others- Library, field work, seminar and assignment preparations, test, journal, discussion etc.						

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains	PSO No.
	Upon completion of this course, students will be able to;		

1	To foster students' understanding in research, research design, types of data and its analysis.	U, A	5
2	To make students talented how to conduct a sample survey with the knowledge of different methods of sampling.	A, An	5,7
3	To provide an overall view of presentation and processing of collected data in the form of tables and diagrams as a preparation for further analysis.	A, An	5,7
4	To introduce students how to further condense the data with the help of statistical measures to make it possible for comparisons and conclusions.	A, An, E	5,7,8
5	To provide a basic idea regarding different soft-wares used in social sciences for the analysis of data.	U, A	7,8
Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)			

COURSE CONTENT

		Hrs	CO.No.
UNIT 1 – BASIC CONCEPTS OF SOCIAL SCIENCE RESEARCH		**13 Hrs**	
1.1	Features of research in social sciences and humanities – Meaning, objectives, and significance of research - tools and methods of research – Different research designs	4	1
1.2	Types of data - Quantitative and qualitative data—Sources of data—Distinction between primary data and secondary data	3	2,3
1.3	Various methods of collecting primary and secondary data – Observation method, interview method, Questionnaire method, schedule method	3	2,3
1.4	Guide lines for preparing a questionnaire – Difference between questionnaire method and schedule method – merits and demerits - difference between survey and experiment	3	1
UNIT 2 – STATISTICAL SURVEY		**12 Hrs**	
2.1	Sampling Design -Census or Sample Survey - Relative advantages and disadvantages of census and sample survey – Different steps in sampling design	3	1

2.2	Different types of sample design - Sampling techniques and process – Probability and non-probability sampling.	3	2,3
2.3	Different methods to obtain a random and non-random sample from a population – Simple random sampling, stratified sampling, systematic sampling, cluster sampling, purposive sampling, convenient sampling and snowball sampling – merits and demerits of each method.- - how to determine the sample size.	6	2,4
UNIT 3- PRESENTATION OF DATA		**10 Hrs**	
3.1	Processing and presentation of collected data – classification and tabulation of data.	4	1
3.2	Presentation of data using diagrams – different types of diagrams – pictograms - cartograms	3	2,3
3.3	Graphical presentation of data – Histograms – frequency polygons – frequency curves - Ogives	3	3,4
UNIT – DESCRIPTIVE MEASURES		**19 Hrs**	
4.1	Descriptive measures – its properties - Measures of central tendency (Mean, Median and Mode) – merits, demerits, and properties of each.	5	1,3
4.2	Measures of dispersion (range, standard deviation and mean deviation) – relative and absolute measures – coefficient of variation - Merits and demerits of each.	5	3,4
4.3	Moments – raw and central - Measures of skewness and kurtosis.	4	3,4
4.4	Bivariate distribution - Correlation analysis – Karl Pearson's coefficient of correlation, Spearman's rank correlation coefficient.	5	3,5
UNIT 5 – INTRODUCTION TO DATA ANALYSIS SOFTWARES		**10 Hrs**	
5.1	Introduction of Software packages: Excel, SPSS, E views, STATA, and Practicals	10	2,5

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Authentic learning, case-based learning, collaborative learning, seminar, group activities.		
	CD	**Course Delivery methods**	
	CD1	Lecture by use of boards/LCD	

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<tr><td></td><td></td><td></td><td>projectors/OHP/Projectors</td><td></td></tr>
<tr><td></td><td></td><td>CD2</td><td>Tutorials/Assignments</td><td></td></tr>
<tr><td></td><td></td><td>CD3</td><td>Seminars</td><td></td></tr>
<tr><td></td><td></td><td>CD4</td><td>Mini projects/Projects</td><td></td></tr>
<tr><td></td><td></td><td>CD5</td><td>Laboratory experiments/teaching aids</td><td></td></tr>
<tr><td></td><td></td><td>CD6</td><td>Industrial/guest lectures</td><td></td></tr>
<tr><td></td><td></td><td>CD7</td><td>Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and</td><td></td></tr>
<tr><td>Assessment Types</td><td colspan="4">Mode of Assessment
• Continuous Internal Assessment (CIA)
• Seminar Presentation – a theme is to be discussed and identified to prepare a paper and present in the seminar
• Assignments
• End Semester examination</td></tr>
<tr><td></td><td colspan="3"><table><tr><th>Course Outcome</th><th>Course Delivery Method</th></tr><tr><td>CO1</td><td>CD1,CD2,CD3</td></tr><tr><td>CO2</td><td>CD1,CD2,CD4</td></tr><tr><td>CO3,</td><td>CD1,CD2,CD3,CD4</td></tr><tr><td>CO4</td><td>CD1,CD2,CD3,CD4</td></tr><tr><td>CO5</td><td>CD1,CD2,CD3,CD4</td></tr></table></td><td></td></tr>
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REFERENCES

1. Murray S. Speigel, Statistics, Schaum Series
2. Speigal. M.R. (1992), Theory and Problems of Statistics, McGraw Hill, London.
3. W.G. Cochran, Sampling Techniques, John Wiley, New York, 1963. Applications
4. Alexander M. Mood, Franklin A. Graybill & Daune C. Boes (1974): *Introduction to Theory of Statistics*.

5. Donald L. Harnett (1977): *Introduction to Statistical Methods*, (Mass.: Addison-Wesley Publishing Co.).
6. Johne Freund (1981): *Modern Elementary Statistics*, (new Delhi: Prentice-Hall of India).
7. A.L. Nagar & R.K. Das (1977): *Basic Statistics*, (Delhi: Oxford Univ. Press).
8. A.L. Nagar, V.N. Pandit & Balvir Singh (1979): *Elementary Statistics*, (Delhi: Oxford Univ. Press).