Semester	ONE
Course	**Multidisciplinary**
Paper Code	**M1ST230111T**
Paper Title	**Data: An Overview**
No. of Credits	**3**
Theory / Practical /Composite	**Theory**
Minimum No. of preparatory hours per week a student has to devote	**3**
Module	**1**

Course Outcomes

1.	**Remember** the sources, types, and nature of data, including population and sample concepts, sampling methods, and primary and secondary data.
2.	**Understand** methods of data collection, questionnaire design, scales of measurement, and classification of variables and attributes.
3.	**Apply** appropriate techniques for collecting, compiling, tidying, and presenting data using graphical methods and summary measures.
4.	**Analyze** datasets using measures of central tendency and dispersion to interpret patterns and variations in data.
5.	**Evaluate** the suitability of data collection methods, presentation techniques, and summary statistics for different research contexts.
6.	**Create** structured reports and audio-visual presentations to communicate data findings effectively across interdisciplinary application areas.

Syllabus

Unit/Module	Content	No. of lectures	CO mapping	Cognitive levels
Unit 1	**Source and nature of data:** Population and Sample. Random and non- random sampling. Primary, secondary data.	6	CO1	K1
Unit 2	**Collection of Data**: Framing simple research questions and preparing well designed questionnaires. Collection of primary data using questionnaire. Compilation of data and data tidying. Data Scrutiny.	4	CO3	K3
	Classification of data: Scales of measurement. Variables and attributes.	4	CO2	K2
Unit 3	**Summarization of data:** Graphical	13	CO4	K4

	representation, Summary measures: Mean, Median, Mode, Range, Standard deviation, Index of qualitative variation (IQV), Quartile deviation (Concept and formula only).			
	Report Writing, audio-visual presentations.	5	CO5 CO6	K5 K6
Unit 4	**Some Application Areas:** Social science, Health Science, Biological Science, Astronomy, Economics, Genetics, Epidemiology, Meteorology, Marketing and Business.	7	CO6	K6

Reading/Reference list

1.	Fundamentals of Statistics, Vol-I; A.M Gun, M.K Gupta, B. Dasgupta.
2.	Statistics: The Art And Science Of Learning From Data: Alan Agresti, Christine A. Franklin, Bernhard Klingenberg.
3.	Statistics Without Tears: A Primer for Non- Mathematicians: Derek Rowntree; Allyn and Bacon, A Simon & Schuster Company.
4.	Writing and Identity: The Discoursal Construction of Identity in Academic Writing: Ivanic, R. (1998), Amsterdam and Philadelphia: Benjamins.
5.	Latex beginner's Guide: Stefan Kottwitz, 2011.
6.	Beyond Bullet points; Using Power points to tell a compelling story that gets results; Cliff Atkinson; Pearson Education; Edition 4; 2020.

Evaluation

Marks	Theory CIA: 15 Semester Exam: 35	Practical (Not applicable)
Paper Structure for Semester Exam	Short Questions (5 Marks Each)	
	7 out of 10	

CO	CO Description	Cognitive levels
CO1	**Remember** the sources, types, and nature of data, including population and sample concepts, sampling methods, and primary and secondary data.	K1
CO2	**Understand** methods of data collection, questionnaire design,	K2

	scales of measurement, and classification of variables and attributes.	
CO3	**Apply** appropriate techniques for collecting, compiling, tidying, and presenting data using graphical methods and summary measures.	K3
CO4	**Analyze** datasets using measures of central tendency and dispersion to interpret patterns and variations in data.	K4
CO5	**Evaluate** the suitability of data collection methods, presentation techniques, and summary statistics for different research contexts.	K5
CO6	**Create** structured reports and audio-visual presentations to communicate data findings effectively across interdisciplinary application areas.	K6