M. G. Science Institute, Ahmedabad

Autonomous | Affiliated to Gujarat University, Ahmedabad

(Managed by The Ahmedabad Education Society)

Department of Statistics

Bachelor of Science (Hons.) in Statistics B.Sc. (Hons.) Statistics 4 Year, 8 Semester Full-Time Programme Choice Based Credit System (CBCS) & Grading System Outcome-Based Education Pattern (Effective from Academic Year 2024-25)



Semester: III		Course Title: Economic Statistics		Credit: 4		
Course No.: STM232						
Course Outcomes: On successful completion of the course the learner will be able to						
CO	COGNIT	IVE	COURSE OUTCOMES			
	ABILITI	ES				
CO 1	REMEME	BERING	Recall fundamental concepts of index numbers,	time series, and		
			vital statistics.			
CO 2	UNDERS '	TANDING	Understand the construction and properties of	Index Numbers,		
			components of times series, and principles	underlying vital		
			statistics			
CO 3	APPLYIN	IG	Apply appropriate methods for constructing	index numbers,		
			analyzing time series data, and computing	vital statistical		
			measures like birth and death rates.			
CO 4	ANALYS	ING	Analyze trends, seasonal variations, and cyclica	al fluctuations in		
			time series data and evaluate the accuracy of ind	dex numbers and		
			vital statistics.			
CO 5	EVALUA	TING	Evaluate the effectiveness of index numbers, time	e series, and vital		
			statistics in real-world applications.			
CO 6	CREATIN	IG	Design models for forecasting time series data an	nd construct new		
			index numbers or vital statistical measures for spe	ecific situations.		

CO-PO Mapping

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	3			2	2
CO 2	3			2	2
CO 3	3	3	2	2	
CO 4	3	3	2	2	
CO 5	3		3	2	
CO 6	3	3	3		3

Unit	Detailed Syllabus	No. of
		Hours of
		Teaching
Ι	Index Numbers-I	15
	Concept of index numbers, use of index numbers, Construction of	
	index numbers, the concept of price, quantity, and value index	
	numbers, Fixed base and chain based index numbers - concept and	
	uses with examples, Wholesale price index numbers, and its economic	
	importance.	
II	Index Numbers-II	15
	Aggregate and weighted index numbers - Laspeyer, Paasche's,	
	Fisher's, and Marshall- Edgeworth formula of index numbers. Tests	
	for index numbers - Circular test, Time Reversal Test and Factor	
	Reversal Test, Ideal index number, Construction of cost of living index	
	number, Brief idea about Base shifting and base splicing and its	
	application.	
III	Time Series	15
	Idea of time series, Components of time series, additive and	
	multiplicative models of time series, measurement of trend by method	

	of moving average, polynomial up to second degree. Computation of seasonal indices using ratio-to-trend method and link relative methods.	
IV	Vital Statistics	15
	A brief note on vital statistics, Role of vital events, methods of data collection on vital events, Measurement of mortality – Crude Death Rate, Specific Death Rate, Standardized Death Rate. Measurements of fertility – Crude Birth Rate, General Fertility Rate, Total Fertility Rate, Gross and Net Reproduction Rate. Concept of life table, meaning and interrelationships of different terms of life table, uses of life table.	

Suggested Reference Books:

- 1. Gupta, S. C. And Kapoor, V. K. (2005): Fundamentals of Applied Statistics, Sultan Chand & Sons.
- 2. Mukhopadhyay P. (1999): Applied Statistics
- 3. Gupta, S. C. (2005): Business Statistics, Himalaya Publishing House.