Detailed Syllabus

Curriculum Designed for: B.A. HON'S		Grant-In-Aid
Semester: I	**Course No.: 113**	**Course Code: DSC-M STA** **Course Title: Fundamentals of Statistics**
Credits:	4	**Course Category: - Minor**

Course Objectives:

Number	Course Objectives (COBJs)
Objective 1:	To introduce students to the fundamental concepts, scope, and importance of statistics in social sciences.
Objective 2:	To develop understanding of various methods of data collection and sources of data.
Objective 3:	To enable students to classify, organize and tabulate data systematically.
Objective 4:	To familiarize students with different types of graphical and diagrammatic representations of data.
Objective 5:	To develop the ability to interpret data using graphs and basic statistical tools.
Objective 6:	To provide knowledge of demographic methods and measures used in population studies.

Course Outcomes: On successful completion of the course, the learner will be able to

CO#	COGNITIVE ABILITIES	COURSE OUTCOMES
CO1	REMEMBERING	Recall and define basic statistical concepts, terminology, and scope of statistics.
CO2	UNDERSTANDING	Explain methods of data collection, classification, and tabulation along with their significance.
CO3	APPLYING	Apply appropriate techniques to collect, classify, tabulate, and present data using graphs and diagrams.
CO4	ANALYSING	Analyze data through graphical representation and frequency distributions to identify patterns and relationships.
CO5	EVALUATING	Evaluate and interpret demographic measures such as birth rate, death rate, and fertility rate for meaningful conclusions.
CO6	CREATING	Construct tables, charts, and graphical presentations to effectively communicate statistical and demographic information.

Course Contents:

Unit No.	Unit Contents	Sessions Allotted
1	**Introduction to Statistics** • Meaning, Definition, Scope and Importance of Statistics • Primary and Secondary Data • Methods of Data Collection: 1. Direct Personal Inquiry 2. Indirect Oral Investigation 3. Questionnaire Method 4. Inquiry through Correspondents 5. Investigation through Post • Sources of Secondary Data	**15 Hours**
2	**Classification and Tabulation** • Meaning and Types of Classification: Simple Classification, Manyfold Classification, Chronological Classification, Geographical (Spatial) Classification. • Meaning and types of Variables, Constant, Types of data, Frequency, Frequency Distribution, Class Interval, Cumulative Frequency, Inclusive & Exclusive Classes. • Data Types: Nominal, Ordinal and Ratio • Formation of Frequency Distribution • Tabulation: Meaning, Objectives, Parts of a Table • Examples	**15 Hours**
3	**Graphical Representation of Data** Meaning of graph and Diagram and their importance. • Bar Diagrams (Simple and Multiple) • Stacked Bar Chart • Histogram • Frequency Polygon and Frequency Curve • Ogive Curves (Less than type and More than type) • Pie Chart • Examples based on above listed all the types of Graphs. Find various measures of central tendency from graph.	**15 Hours**
4	**Demographic Methods / Vital Statistics** • Meaning and Scope of Vital Statistics • Methods of collecting demographic data • Measures of Birth Rate, Death Rate and Fertility Rate • Infant Mortality Rate • Examples covering above measures	**15 Hours**

REFERENCES:

1. Gupta, S.P. – *Statistical Methods*
2. Gupta, S.C. & Kapoor, V.K. – *Fundamentals of Applied Statistics*
3. Elhance, D.N. – *Fundamentals of Statistics*
4. Croxton & Cowden – *Applied General Statistics*
5. Spiegel, M.R. – *Statistics (Schaum's Outline Series)*

1. Textual Resources (E-Books & Study Material)

Sr. No.	Resource	Description	Link
1	OpenIntro Statistics	A free and comprehensive introductory textbook covering fundamental statistical concepts	https://www.openintro.org/go/?id=os4_for_screen_reader&referrer=/book/os/index.php
2	ePG Pathshala (UGC)	High-quality academic modules for undergraduate students	https://epgp.inflibnet.ac.in/
3	Statistics LibreTexts	Open-source materials on data classification, tabulation, and graphical methods	https://stats.libretexts.org/
4	WHO Data & Reports	Global reports on health statistics and vital measures	https://www.who.int/data
5	Census of India	Official Indian data source for demographic statistics	https://censusindia.gov.in

2. Video Learning Resources

Sr. No.	Resource	Description	Link
1	SWAYAM Platform	Government-supported online courses for higher education	https://swayam.gov.in
2	Khan Academy	Beginner-friendly video tutorials on statistics and probability	https://www.khanacademy.org/math/statistics-probability

3. Data Sources for Practice and Projects

Sr. No.	Source	Description	Link
1	World Bank Open Data	Global datasets for statistical analysis and research	https://data.worldbank.org
2	UNICEF Data	Data on child health, mortality, and demographic indicators	https://data.unicef.org