UNIVERSITY OF DELHI

NOTIFICATION

Sub: Amendment to Ordinance V

[E.C Resolution No. 14/ (14-1-4) dated 09.06.2023]

In accordance with EC Resolution No. 14-1-4 dated 09.06.2023, it is notified for all the concerned that paper titled "Introduction to Vital Statistics and Demography" is offered as Discipline Specific Elective in the syllabi of 4th Semester of Department of Statistics for the students of BSC (Programme) for the academic session 2023-2024 only. The course content and credit structure of the paper is at *Annexure-1*.

REGISTRAR

SEMESTER-IV
DEPARTMENT OF STATISTICS
Discipline Specific Elective (for session 2023-2024 only)
B.Sc. (P) with Statistics as one of the papers

DISCIPLINE SPECIFIC ELECTIVE : INTRODUCTION TO VITAL STATISTICS AND DEMOGRAPHY

CREDIT DISTRIBUTION, ELIGIBILITY, AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the Course			Eligibility Criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Vital Statistics and Demography	4	3	0	1	Class XII with Mathematics	knowledge of basic statistics

Learning Objectives:
The learning objectives of this course are as follows:
- To collect valid Demographic data using different methods.
- To learn basic measures of Mortality, Fertility, and Population Growth.
- To construct life tables.

Learning Outcomes:
After successful completion of this course, students will be able to:
- Distinguish between Vital Statistics and Demography.
- Understand errors in Demographic data.
- Comprehend sources of data collection on Vital Statistics and errors therein.
- Use methods for measurement of Population.
- Distinguish between Rate and Ratio.
- Understand the basic measures of Mortality.
- Describe and apply the concepts of Stable and Stationary Populations.
- Understand the concept of Life Tables and their construction.
- Understand the basic measures of Fertility.
- Apply measures of Population Growth.

SYLLABUS
Theory

UNIT I   **(10 Hours)**
Introduction to Vital Statistics

Introduction and sources of collecting data on vital statistics, errors in the census, and registration data. Measurement of population, rate, and the ratio of vital events.

UNIT II   (12 Hours)
Measurements of Mortality
Crude Death Rate (CDR), Specific Death Rate (SDR), Infant Mortality Rate (IMR), and Standardized Death Rates. Stationary and Stable population, Central Mortality Rates, and Force of Mortality.

UNIT III   (10 Hours)
Life Tables
Life(Mortality) Tables: Assumption, description, construction of Life Tables, and Uses of Life Tables.

UNIT IV   (13 Hours)
Measurements of Fertility
Crude Birth Rate (CBR), General Fertility Rate (GFR), Specific Fertility Rate (SFR), and Total Fertility Rate (TFR). Measurement of Population Growth: Crude rates of natural increase, Pearl's Vital Index, Gross Reproduction Rate (GRR), and Net Reproduction Rate (NRR).

PRACTICAL/LAB WORK - 30 hours
List of Practicals:
1. To calculate CDR and Age Specific death rate for a given set of data.
2. To find a standardized death rate by (i) Direct method and (ii) Indirect method.
3. To construct a complete life table.
4. To fill in the missing entries in a life table.
5. To calculate CBR, GFR, SFR, TFR for a given set of data.
6. To calculate Crude rate of Natural Increase and Pearle's Vital Index for a given set of data.
7. Calculate GRR and NRR for a given set of data and compare them.

Practical work to be conducted using electronic spreadsheet / EXCEL/ Statistical Software Package/ SPSS/ calculators.

ESSENTIAL READINGS:
- Gun, A.M., Gupta, M.K. and Dasgupta, B. (2008). Fundamentals of Statistics, Vol. II, 9thEd., World Press.
- Biswas, S. (1988). Stochastic Processes in Demography & Application, Wiley Eastern Ltd.

SUGGESTED READING:
- Mukhopadhyay, P. (1999). Applied Statistics, Books and Allied (P) Ltd.
- Keyfitz, N. and Beekman,J.A. (1985). Demography through Problems. S-Verlag, New York.
- Croxton, Fredrick, E. Cowden, Dudley J. and Klein, S. (1973). Applied General Statistics, 3rd Ed., Prentice Hall of India Pvt. Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch University of Delhi, from time to time.