Title: Vital Statistics **Paper: II (Major)**
Course No: STSC-28220 **Semester: 8th** **No. of Credits: 4+2**

Course Objectives: To inculcate in students the basic and advanced concepts of vital Statistics.

Course outcomes: On successful completion of this course, the students will be able to:

- Apply Vital statistics concepts in real life problems.
- Learn and construct Life tables with their applications.

Theory: 4 credits

UNIT –I

Introduction of Population studies, Demography, Vital Statistics, Cohort, Radix, Sources of demographic data, Census: its types and features, Demographic profiles of the Indian Census, Fertility, Measurement of Fertility: Crude birth rate, General fertility rate, Age-specific birth rate, Total fertility rate, Gross reproduction rate, Net reproduction rate.

UNIT –II

Mortality, Measurement of Mortality: Crude death rate, Direct and Indirect Standardized death rates, Age-specific death rates, Infant Mortality rate, Neo-Natal mortality rate, Post neonatal mortality, the death rate by cause, Force of mortality, Central mortality rate.

UNIT –III

Life table and its construction, complete life table and its main features, Uses of life table, Markham's and Gompertz's curves, National life tables, UN model life tables, Abridged life tables, Stable and stationary populations.

UNIT –IV

Migration: its types, internal migration and its measurement, migration models, the concept of international migration, Net migration and Gross Migration, International and post censal estimates, Projection method including logistic curve fitting, Decennial population census in India.

Practical: 2 credits

Practical based on:

- Measurement of Fertility rates.
- Gross reproduction and Net reproduction rates.
- Measurement of Mortality rates.
- Life table construction.
- Construction of Markham's and Gompertz's curves.
- International and post censal estimates.
- Projection method including logistic curve fitting.

Recommended Text Books & References:

- Gupta S. C. and Kapoor V.K. (2001): Fundamental of Applied Statistics.
- Bartholomew, D.J. (1982): Stochastic Models for Social Processes.
- Benjamin, B. (1969): Demographic Analysis.
- Ching, C. L. (1968): Introduction to Stochastic process in Biostatistics.
- Cox. P. R. (1970): Demography.
- Keyfitz, N. (1977): Applied Mathematical Demography.
- A.A. Bhende and T.Kanitkar: Principles of Population Studies, himaliya Publishing House.