### PG Diploma in Bio-Statistics and Demography (PGDBSD)

### **Course Structure:**

Paper	<b>Course Code</b>	Title of the Course	Terminal	Assignment/	Total	Credits
No.			Examination	Internal		
	PGDBSD-01	Concepts of Demography	70	30	100	8
	PGDBSD-02	Demographic Models	70	30	100	8
	PGDBSD-03	Research Methodology	70	30	100	8
	PGDBSD-04	Bio-Statistics	70	30	100	8
	PGDBSD-05	Practical and Viva-voice	100		100	8
	Total		380	120	500	40

# PGDBSD-01 Concepts of Demography

### **Block-1:** Introduction to Demography

- Unit-1:Definition and Scope of Demography, Sources of Demographic Data:<br/>Cenuses, National Sample Survey, Simple Registration System,<br/>Demographic Health Surveys, Others, Basic Demographic Concepts,
- Unit-2:Dynamics of Age Sex Structure, Factors Affecting the Structure, Aging of<br/>Population, Factors Affected Age Structure
- Unit-3: Errors in Census and Vital Statistics and their Adjustment, Whipples and Myer's Indecies, Chandrasekharan Deming Formulae to Check of Reglsfation Data.

### Block- 2: Demographic Parameters

Unit-1: About Fertility, Different Measurements of Fertility, Basic Fertility Measures, Cole Fertility Indices, Reproduction Measures, Bongarts Proximate Determination, Birth Interval Analysis

Unit-2:	About Mortality, Different Measurements of Mortality, Basic Measures,
	Infant Mortality Rate, Maternal Mortality Rate, Basic Concepts of Life
	Table its types and forms, Model Life Table

Unit-3: Concept of Mobility and Migration, Types of Migration, Different Measurements of Migration, Basic Measures, Causes and Consequences of International Migration.

## PGDBSD-02 Demographic Models

### Block-1: Fertility Models

- Unit-1:Brass P/F Ratio to Estimate Current Fertility Levels, Coales Models for AgePattern of Fertility, Elementary Stochastic Processes. Fertility Models.
- Unit-2:Time of First Birth/Conception; Number of Births/Conceptions in a SpecifiedTime; Birth Intervals. Study of fertility through Birth Interval Analysis

### Block- 2: Mortality and Migration Models

- **Unit-1:** Life table and its Constitution. Makeham's and Gompetz Curve, Abridged Life Yables, Model-Life-Tables, National Life Tables and Nuptiality tables.
- **Unit-2:** Migration Rates and Ratio's Methods of Estimate Inter-Censal, Migration Using-Vital Statistics, Survival Ratio and Growth Rate, Migration Models.

Indirect Measure of Net Internal Migration Based on Growth Rate Method, Methods to Estimate Inter-Censal Migration – Using Vital Statistics, Life Time Survival Ratio Method and Census Survival Methods, Estimation of International Migration.

### Block- 3: Population Growth Models

Unit-1: Stable and Stationary Populations. Use of Leslire's Matrix. Inter Censal And PostCensual Estimates. Growth Curves and Method of Their Fitting, StochasticModels for Population Growth.

Unit-2: Methods of Estimating Basic Demographic Measures from Incomplete Date. Logistic Curve and Its Fittings, Growth and Age- Sex Structure Of Projection, Conjectural Estimates, Mathematical and Statistical Methods, Component Method,

# PGDBSD-03 Research Methodology

### Block- 1: Introduction to Research Methodology

- Unit-1:Meaning and Types of Research, Significance of Research, About<br/>Research Problem and its Selection.
- Unit-2: Dynamics of Age Sex Structure, Factors Affecting the Structure, Aging of Population, Factors Affected Age Structure, Meaning and Need for Research Design.

### Block- 2: Sampling Design

Unit-1:	About Sampling, Different Types of Sampling Designs.
Unit-2:	Methods of Data Collection, Meaning and Techniques of Interpretation.
Unit-3:	Meaning and Measurement of Scaling. Scale Construction Techniques.

# PGDBSD-04 Bio-Statistics

# Block- 1: Descriptive Statistics Unit-1: About Statistics, Measures of Central Tendency, Measures of Dispersion, Measures of Asymmetry. Unit-2: Measures of Relationship, Regression Analysis Association of Attributes. Block- 2: Testing of Hypothesis

Unit-1:	About Hypothesis and its Types, Level of Significance, Chi-Square Tests,
	t-tests, z-tests.
Unit-2:	Analysis of Variance and Co-Variance, Basic Principles of ANOVA and ANCOVA. (One Way, Two Way and Three Way Analysis)
Unit-3:	Non Parametric Tests, Sign Tests, Run Tests, Wilcoxan Tests, Kendall Tests. Etc.

# PGDBSD-05 Practical and Viva-voice

Based on PGDBSD- 01, 02, 03 and