

Punyashlok Ahilyadevi Holkar Solapur University, Solapur



Name of the Faculty: Science & Technology

CHOICE BASED CREDIT SYSTEM

Syllabus: Statistics (GE)

Name of the Course: B.Sc. I (Sem.– I & II)

(Syllabus to be implemented from June 2022)

Unit I**(15 hrs)**

1.1 Ministry of Statistics and Programme Implementation (MoSPI), Chief Statistician of India, indices of economic growth, functions of NSSO and CSO and their principle findings, national income, per capita income, gross domestic product.

1.2 Sources of demographic data, Measurements of Morbidity: Morbidity Incidence and Morbidity Prevalence Rates.

Measurements of Fertility: Crude Birth Rate (CBR), General Fertility Rate (GFR), Specific Fertility Rate (SFR) and Total Fertility Rate (TFR).

Unit-II**(15hrs.)**

2.1 Measurements of Mortality: Crude Death Rate (CDR), Specific Death Rate (SDR), Standardized Death Rate, Cause of Death Rate, Case Fatality Rate, Infant Mortality Rate (IMR), Maternal Mortality Rate (MMR), Neonatal and Perinatal Mortality Rates. Measurement of Population Growth: Crude rates of natural increase, Pearl's Vital Index, Gross Reproduction Rate (GRR) and Net Reproduction Rate (NRR).

2.2 Population Estimation, Projection and Forecasting: Use of A.P. and G.P. methods for population estimates, Use of component method for population projection, Fitting of Logistic curve for population forecasting using Rhode's method.

Books recommended:

1. Mukhopadhyay, P. (1999): Applied Statistics, Books and Allied (P) Ltd.
2. Goon, A.M., Gupta, M.K. and Dasgupta, B. (2008): Fundamentals of Statistics, Vol. II, 9th Edition, World Press.
3. Biswas, S. (1988): Stochastic Processes in Demography & Application, Wiley Eastern Ltd.
4. Keyfitz, N and Caswell. H (2005): Applied Mathematical Demography (3rd edition), Springer.
5. Chattopadhyay, A.K. and Saha, A.K. (2012): Demography: Techniques and Analysis, Viva Books.
6. Ramakuar, R. and Gopal, Y.S. (1986): Technical Demography. Wiley Eastern Ltd.
7. Spiegelman M. (1980): Introduction to Demography, Harvard University Press.
8. Mishra B.D. (1980): An Introduction to the Study of Population, South Asian Pub.

Unit-I**(15 hrs.)**

1.1 Index numbers: Definition, Criteria for a good index number, different types of index numbers.

Construction of index numbers of prices and quantities, consumer price index number. Uses and limitations of index numbers.

1.2 Choice of weights, Laspeyres' and Paasche's index numbers. Tests of index numbers and Fisher's ideal index number.

Unit-II**(15 hrs.)**

2.1 Components of time series, Decomposition of time series- Additive and multiplicative model with their merits and demerits, Illustrations of time series.

2.2 Measurement of trend by method of free-hand curve, method of semi-averages and method of least squares (linear, quadratic and modified exponential). Measurement of seasonal variations by method of ratio to trend.

Books recommended:

1. Mukhopadhyay, P. (1999): Applied Statistics, New Central Book Agency, Calcutta.
2. Gun, A.M., Gupta, M.K. and Dasgupta, B. (2008): Fundamentals of Statistics, Vol. II, 9th Edition World Press, Kolkata.
3. Gupta, S. C. and Kapoor, V.K. (2008): Fundamentals Of Applied Statistics, 4th Edition(Reprint), Sultan Chand & Sons