(COMMON FOR THE FACULTIES OF ARTS & SCIENCE)
THIRD YEAR B. Sc./B.A
STATISTICS
2016-17

Papers	Periods per week	Examination Hours	Maximum Marks	
Theory Papers			B.A	B.Sc.
Paper I	2	3	45	50
Paper II	2	3	45	50
Paper III	2	3	45	50
Practicals**	4	4	65	75
Total Marks			200	225

* **1 Period 1 hours**

** **per batch**

NOTE:

1. Common papers will be set for both the Faculties of Arts & Science.

2. Students are allowed to use simple electronic desk calculators (as per University guidelines).

3. Statistical Tables may be used (as per University guidelines)

Visit to Local Governments/ Organizations, Semi Governments Departments/ Organizations, Government Undertaking Organizations, Statistical Institute of repute, Private sector Statistical Organization and Research Stations within Udaipur Division may be organized to familiarize students with the practical work done at these centers

PAPER -III
THEORY OF SAMPLE SURVEYS AND VITAL STATISTICS

TIME: 3 hours   **Max. Marks**
UNIT-I

Concepts of population and sample, need for sampling.

The principle steps in a sample survey, concept of sampling and non-sampling errors, Advantages of sample survey over complete enumeration, Limitations of sampling, types of sampling, basic principles of sampling design, procedures of selecting a random sample.
UNIT-II
Simple random sampling with and without replacement for variables and attributes. Stratified random sampling including allocation problems.

UNIT-III

Cluster Sampling (with equal cluster size): Definition, Estimation of mean and its variance, Variance estimator, Efficiency with SRS including intra class correlation coefficient (Excluding cost function).

Two-stage sampling (with equal clusters size): Definition, Estimation of mean and its variance, Variance estimator and cost function.

UNIT-IV

Ratio and Regression methods of estimation (expression's for bias only) Systematic sampling, estimation of mean and its variance, comparison with SRS and stratified random sampling for a linear trend population.

UNIT-V

Vital Statistics: Uses of vital statistics, methods of obtaining vital statistics, Measurement of mortality crude death rate, specific death rates, standardized death rates. Life table, assumptions, description and construction of life table and its uses, Fertility, measurements of fertility, crude, general, specific and total fertility rates. Measurements of population growth, gross and net reproduction rates.

Recommended Books :

1. Sukhatme P.V., Sukhatme B.V.,   : Sampling theory of Surveys, and Applications,
   Sukhatme S. and Ashok C.   Indian Society of Agricultural Statistics, New Delhi.
2. Gupta S.C and Kapoor V.K.   : Fundamentals of Applied Statistics, Sultan Chand
                                      & Sons, New Delhi

Reference Books:

1. Goon A.M., Gupta M.K   : Fundamentals of Statistics, Vol.11, The World and
   Dasgupta, B.   Press Pvt. Ltd., Calcutta.
2. Cochran W.G.   : Sampling Techniques (Hindi and English Edition),
                                   Kendriya Hindi Granth Academy, New Delhi (Hindi
                                   Ed.), Wiley Eastern Ltd, New Delhi (English Ed.)
3. Mukhopadhyay P.* (1998)   : Theory and Methods of Survey Sampling, Prentice
                                   Hall
4. Sampat, S. (2000)   : Sampling Theory (Narosa).
5. Srivastava, O.S. (1983)   : A text book of demogrdphy, Vikas Publishing House,
                                   New Delhi
6. Benjamin B. (1959)   : Health and vital Statistics, Allen and unwin.