Ambedkar University Delhi

Course Outline

Monsoon Semester (July-December 2017)

School: Undergraduate Studies

Programme with title: BA (Honours)

Semester to which offered: (I/ III/ V)   III Semester

Course Title: Statistics

Credits: 4 Credits

Course Code (new):   SUS1PS705

Course Code (old):   P05

Type of Course: Compulsory   yes   Cohort   BA (H) Psychology

                       Elective   yes   Cohort   BA (H) other than Psychology

For SUS only (Mark an X for as many as appropriate):

1. Foundation (Compulsory)
2. Foundation (Elective)
3. Discipline (Compulsory)   X
4. Discipline (Elective)
5. Elective

Course Coordinator and Team: Mr. Gangmumei Kamei

Email of course coordinator: gangmumei@aud.ac.in

Pre-requisites: None

<u>**Aim**</u>:
Statistics is the science of classifying, organizing, and analyzing data. Without Statistics, data collected in our everyday observations or in carefully controlled experiments would have very little meaning. This paper on Statistics introduces the students to the basic and foundational concepts of how data are classified, organized, measured, and analyzed. The paper will focus on some of the basics of Statistics such as introduction to statistics, central tendency (mean, median and mode), normal curve, correlation,

testing hypothesis about single means (z and t), one way analysis of variance (ANOVA), graphical representation of frequency distributions such as histogram, frequency polygon, bar diagram, pie chart etc.

Brief description of modules/ Main modules:

1. Introduction to Statistics: This module will include some basic concepts and introductory notes on descriptive statistics, inferential statistics, random samples, variables and constants, scales of measurement etc.

2. Central Tendency: In this module, the main focus will be on the basics, properties and calculation of the arithmetic mean, median and mode.

3. Normal Curve: This module will introduce the students about the historical aspects of the normal curve, nature of normal curve, finding areas when the score is known and vice-versa, etc.

4. Graphical representations of frequency distributions: This module includes histogram, frequency polygon, bar diagram, pie chart, factors affecting the shape of graphs, etc.

5. Correlation: The main focus of this module is on some of the history of correlation, understanding the degree of correlation, formulas for Pearson's Coefficient of Correlation, calculating *r* from raw scores etc.

6. Testing Hypothesis about single means (*z* and *t*): This module includes testing of hypothesis about single mean, when to retain or reject hypothesis, estimating standard error of mean and degrees of freedom, computing *t* from raw scores etc.

7. One way Analysis of Variance (ANOVA): This module touches upon the various assumptions underlying ANOVA, partition of sums of squares, degrees of freedom, raw score formulas for ANOVA, comparison of *t* and *F*.

Refererences:

Textbook
Elements of Statistical Reasoning by Edward W. Minium, Robert C. Clarke & Theodore Coladarci

1. Dennis H. & Duncan C. (2011). Introduction To Statistics In Psychology (5th ed.). England: Pearson Education.

2. Garrett H.E. (2009). Statistics In Psychology And Education. New Delhi: Paragon

International Publishers.

3. Minium, E.W., King B. M., & Bear G. (2001). Statistical Reasoning in Psychology and

Education (3rd ed.). Singapore: John Wiley & Sons.

4. Neil A.W. (1993). Elementary Statistics (2nd ed.). New York: Addison-Wesley Publishing.

5. Stanislav K., Douglas S., & Lori T. (2010). Statistics in the Social Sciences: Current

Methodological Developments. New Jersey: John Wiley & Sons.

<u>Tentative Assessment schedule with details of weightage</u>:

S.No	Assessment	Date/period in which Assessment will take place	Weightage
1	Class test	23rd August	20%
2	Mid Semester Exam	20th September	40%
3	End Semester Exam	29th November	40%