**GEC COURSE Department of RDAP for 1st Semester,2022**

**RDA-GEC-504: Statistical Techniques and Software Application**

**(Total Marks = 100; Theory= 75, Practical = 25) Credit: 3+1=4**

**Objectives:**

To equip the students with knowledge on various statistical tools and software useful for data analysis.

**Course outcome:**

Understanding of statistics, various measures, basic principles of field experiments and their methods, various computer software.

**Unit-I:**

Introduction to statistics, measures of central tendency, standard deviation and standard error and rank correlation, Coefficient of variation, Skewness, Kurtosis, Probability, statistical and classical definition of probability, Distribution – binomial, poison and normal distribution and its characteristics. Simple, partial and multiple correlation and regression.

**Unit-II:**

Analysis of Variance, Basic principles of Field experimentation, Completely Randomized Design (CRD), Randomized Block Design (RBD), Latin Square Design (LSD), Factorial Experiment and Split- plot Design. Missing values in RBD and LSD.

**Unit -III:**

Tools and techniques of data analysis: Computer software and its classification: System and application software. Various statistical software packages- MS Excel and SPSS, R software etc.

**Unit- IV (Practical):**

Calculation of Correlation and Regression.

Statistical analysis of CRD, RBD, LSD, factorial and Split-plot design.

Analysis of missing value in RBD and LSD with one value.

Use of statistical software in social and agricultural sciences.

**Suggesting Readings:**

Agarwal SP 2015. Statistical methods: Concepts, Application and Computation. Delhi

Chandel RS 1972. Handbook of Agricultural statistics, Achal Prakashan Mandir, kanpur

Arora Pawan 2000. Computers for beginners, New Light publishers, New Delhi

Dixit 1999. Statistical and Intercede Design of experiment, Narosa, New Delhi

Fielding J 2006. Understanding social Statistics, sage, London

Frank H and Sline 2002. Statistics: Concepts and Application, Cup, New York