DEPARTMENT OF STATISTICS
THE MADURA COLLEGE (AUTONOMOUS) , MADURAI-11.

CERTIFICATE COURSE : STATISTICAL ANALYSES USING R PROGRAMMING

DESCRIPTION:

Any data analysis is incomplete without Statistics. Statistics is the art of using data to make numerical conjectures about problems. Descriptive statistics is the art of summarizing data.After getting the data, any statistical analysis starts with descriptive statistics which aims to extract the information hidden inside the data. The tools of descriptive statistics are based on mathematical and statistical functions which are to be evaluated using the software. The statistical software's are paid as well as free. One of the most popular and highly used for data analysis statistical software is R. It is available freely with fast updates. What are the basic tools of descriptive statistics and how to use the R software for descriptive statistical analysis is the objective of the course to be taught.

CERTIFICATE COURSE : STATISTICAL PACKAGES FOR SOCIAL SCIENCES

DESCRIPTION:

This SPSS data analysis course was created for one reason, which is to help anyone without statistics or mathematics background to analyze data in SPSS, choose the right descriptive statistics technique and write up the result of the findings with confidence. The course covers everything from entering data into SPSS to interpreting the result and offers easy step-by-step guide to mastering descriptive statistics in SPSS. Firstly, we will take you through the SPSS interface, how to work the system and avoid some of the mistakes people make when choosing variable types and format in SPSS. After that, we will dive into entering data into SPSS, sorting, editing and removing data, and most importantly how to transform any variable into a new variable with recode functions. We will then focus on descriptive statistics in SPSS and you will learn how to run the major descriptive statistics like Mean, Median, Mode, Standard Deviation and One-Samples t-test etc. You will learn how to create graphs, plots and charts in SPSS and how to manipulate them to suit your needs.

CERTIFICATE COURSE : STATISTICAL DATA ANALYSIS USING EXCEL

DESCRIPTION:

Any data analysis is incomplete without Statistics. Statistics is the art of using data to make numerical conjectures about problems. Descriptive statistics is the art of summarizing data.After getting the data, any statistical analysis starts with descriptive statistics which aims to extract the information hidden inside the data. The tools of descriptive statistics are based on mathematical and statistical functions which are to be evaluated using the software. The statistical software's are paid as well as free. One of the most popular and highly used for data analysis statistical software is Excel. It is available freely with fast updates. What are the basic tools of descriptive statistics and how to use the Excel for descriptive statistical analysis is the objective of the course to be taught.

CERTIFICATE COURSE : QUANTITATIVE APTITUTE FOR COMPETITIVE EXAMINATIONS

DESCRIPTION:

Quantitative reasoning (QR) is a conceptual process that employs one or more of a family of mathematical or logistical methods to analyze and solve problems in a variety of Quantitative reasoning is multi-disciplinary and invites a wide diversity of disciplines and departments to offer courses to satisfy this requirement. We describe here the requirements for thecourse in Quantitative Reasoning, focusing on Mathematical, Logical, and StatisticalFoundations.

EVALUATION PATTERN:

Evaluation is carried out based on objective and descriptive type questions. Out of 100%, 40% of marks are obtained by assignment and Internal test (best of 3 assignments out of the total 5assignments) and other 60% of marks from final exam score.

DEPARTMENT OF STATISTICS			*Certificate Course*				
Course Type	**Course Code**	**Course Code Course Title**	**Credits**	**Total Contact Hours**	**CIA**	**Ext**	**Total**
Value Added Course		Statistical Analyses Using R Programming	2	30			

Learning Objectives:

- To enable the students to understand the basic descriptive statistics.
- To learn the basic R Programming.
- To develop knowledge and understand theory in practical application of statistical techniques.

Learning out comes:

- In term of knowledge, demonstrate their understanding of descriptive statistics by practical application of quantitative reasoning and data visualization.
- In terms of skills, use R to conduct statistical analyses.

UNIT - 1:

Introduction to R software: Using the R console - A sample R session - R as calculator – Data vector – Build – in commands and missing data – Basic matrix computation.

UNIT – 2:

Introduction to Descriptive Statistics: Variable and type of data - Frequency – Absolute frequency – Relative frequency – Frequency distribution – Cumulative distribution – Graphics and plots.

UNIT – 3:

Measure of Central tendency – Measure of dispersion – Variation in data - Moments: Raw and Central moments – Skewness and Kutosis.

UNIT – 4:

Association of variables: Univariate and bivariate Scattor plot – Quantile – Quantile and Three dimensional plot – Pearson's correlation coefficient and Rank correlation.

UNIT – 5:

Association of variables for discrete and countable data: Contingency table, Chi-square statistics, Cramer's V statistics, Contingency coefficient. Fitting of Linear models: Least square method (one and more than onevariable) – R commands.

Books for reference:

- John Verzani (2009), Using R for Introductory Statistics, Chapman & Hall/CRC, Ebook/pdf., UK.
- Sudha G. Purohit, Sharad D. Gore and Shilaja R. Desmukh (2009), Statistics Using R Language, Narosa, Chennai.
- Madhanagopal, R., Michael Rani Mary Kirba and Subramanian, P.V. (2013),A handbook on R-Language: A programing Software for statistical computing and graphics, Study material of UG Statistics, Madras Christian College, Chennai.