SUBHARAM GOVT DEGREECOLLEGE,PUNGANUR

DEPT. OF STATISTICS

OBJECTIVES AND OUTCOMES

CODE	Topics	Objectives	OUTCOMS
1-1-112-R20	Introduction to Statistics	• To understand thenature, scope andsignificance of Statistics. • To acquaint with the theories, approaches, concepts and Principles of Statistics ○	The student can draw boundaries of the STATISTICS and other Social Sciences. The Student identifies the significance of Statistics. The student can classify Classical and Modern Approaches of the Statistics.
	Descriptive Statistics (Theory+ Practical)	Concepts of statistical population and sample, variables and attributes. Tabular and graphical representation of data based on variables. Conditions for the consistency' and criteria for the independence of data based on attributes. Measures of central tendency, Dispersion, Skewness and Kurtosis. Moments and their use in studying various characteristics of data. Different approaches to the theory of probability. Important theorems on probability and their use in solving problem	Students learn to design data collection plans and basic tools of Statistics

1-2-122-R20	Sampling Distributions (Theory+ Practical)	To understand the concept of sampling distributions and their applications in statistical inference. To understand the process of hypothesis testing and its significance Importance of Standard Error and to draw conclusions using p-value	Student learn to i) identify the relationship between two variables using scatter plot ii) Interpret a sample correlation

1-4-112R20	Survey Sampling and Indian Official Statistics (Theory+ Practical)	Survey Sampling provides the tolls/ techniques for selecting a sample of elements from a target population keeping in mind the objectives and nature of population. Most of the research work is done through Sample Survey. The students are able to know about Indian Official Statistical System.	Understand the concept of sampling distribution of a statistic and its properties, difference between parameter and statistic
1-3-112-R20	2-Statistical Inference (Theory+ Practical)	Statistical inference: Drawing conclusions about the whole population on the basis of a sample. Statistical inference is the process of deducing properties of an underlying probability distribution by analysis of data. Inferential statistical analysis infers properties about a population, this includes testing hypotheses and deriving estimates	Students are able to describe the properties of unbiasedness. They are also learning to identify the null hypothesis, alternative hypothesis and test statistic.
		The learning objectives includes developing a clear understanding	

1-4-112-R20	Linear Models (Theory+ Practical)	of the fundamental concepts of linear models and a range of associated skills allowing the students to work effectively with them. The linear models are useful both in the planning stages of research and in the analysis of resulting data. The combination of theory and applications will prepare students to explore the course & more correctly interpret the output from linear model computer package.	Students learn different types of linear models with their properties and applications.

1-4-112-R20	Design of Experiments (Theory+ Practical)	DOE is a tool to develop an experimentation strategy that maximizes learning using a minimum of resources. Extensively used by engineers and scientists involved in the improvement of manufacturing processes to maximize yield and decrease variability. It is widely used in many fields with broad application across all the natural and social sciences, to name a few: Biostatistics, Agriculture, Marketing, Software engineering. Industry etc. After completing Course in DOE students should have developed a clear understanding of:	The fundamental concepts of design of experiments. Introduction to planning valid and economical experiments within given resources. Completely randomized design. Randomized block design. Latin square design.
1-4-112-R20	Time Series Analysis (Theory+ Practical)	Students of this course are taught to understand and predict the changes in economy. Areas of learning include:	Students of this course are taught to understand and predict the changes in economy. Areas of learning include

1-5-122 6A-R20	Operations Research (Theory+ Practical)	The 'Operations Research' is not only confined to any specific agency like defense services but today it is widely used in all industrial organizations. It can be used to find the best solution to any problem be it simple or complex. It is useful in every field of human activities. Thus, it attempts to resolve the conflicts of interest among the components of organization in a way that is best for the organization as a whole. Main fields where OR is extensively used are:	Formulate and solve LPP, Assignment problems, Transportation problems. ii) solve the zero-sum-two person -game
1-5-122 7A-R20	Statistical-Data Analysis Using Software Packages	SPSS is a comprehensive and flexible statistical analysis and data management solution. SPSS can take data from any type of file and use them to generate tabulated reports, charts, and plots of distributions and trends, descriptive statistics, and conduct complex statistical analyses, thus most popular and widely used statistical software. This paper not only equips them with a data analysis tool but it also helps students learn and understand their statistical fundamentals better and with ease. Learning the basic statistical software will help students to easily switch over to any other statistical software in future.	Students are able to get soft ware skills.

1-5-122 7A-R20	Statistical Data Analysis Using R	This course will review and expand upon core topics in probability and statistics through the study and practice of data analysis and graphical interpretation using `R'. Being an open-source and user-friendly statistical programming language, students would be able to perform better in research as well. R is one of the most powerful and popular statistical programming languages used by data scientists today thus it will prepare the students with current market pace.	Students are able to get soft ware skills.