Lovely Professional University, Punjab

Course Code	Course Title	Lectures	Tutorials	Practicals	Credits	
INT351	STATISTICS AND EDA	2	0	3	4	
Course Weightage	ATT: 5 CA: 25 MTT: 20 ETT: 50					
Course Focus	EMPLOYABILITY,SKILL DEVELOPMENT					

Course Outcomes :Through this course students should be able to

CO1 :: understand the basic concepts of exploratory data analysis.

CO2 :: apply the univariate techniques on the data to analyze it.

CO3 :: apply the concepts of probability and distribution to depicts the expected outcomes of possible values for a given data.

CO4 :: study the different methods to explore the data for analysis

CO5 :: understand the different types of inferential statistics

CO6 :: study the different types of testing on data to perform the inferential statistics

	Reference Books (R)		
Sr No	**Title**	**Author**	**Publisher Name**
R-1	HANDS-ON EXPLORATORY DATA ANALYSIS WITH PYTHON: PERFORM EDA TECHNIQUES TO UNDERSTAND, SUMMARIZE, AND INVESTIGATE YOUR DATA	SURESH KUMAR MUKHIYA , USMAN AHMED	PACKT PUBLISHING
R-2	STATISTICAL LEARNING AND DATA SCIENCE	MIREILLE GETTLER SUMMA, LEON BOTTOU, BERNARD GOLDFARB, FIONN MURTAGH, CATHERINE PARDOUX, MYRIAM TOUATI	CHAPMAN & HALL (CRC PRESS)
R-3	STATISTICAL ANALYSIS	DR. B. N. GUPTA	SBPD Publications

LTP week distribution: (LTP Weeks)	
Weeks before MTE	7

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Weeks After MTE	7
Spill Over (Lecture)	4

Detailed Plan For Lectures

Week Number	Lecture Number	Broad Topic(Sub Topic)	Chapters/Sections of Text/reference books	Other Readings, Relevant Websites, Audio Visual Aids, software and Virtual Labs	Lecture Description	Learning Outcomes	Pedagogical Tool Demonstration/ Case Study / Images / animation / ppt etc. Planned	Live Examples
Week 1	Lecture 1	EDA(introduction to EDA)	R-3		It will introduction to EDA	student will learn about eda	Demonstration using datasets	
	Lecture 2	EDA(public and private data)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(web scraping)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(data types)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(fixing the rows and columns)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(impute/remove missing values)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(handling outliers)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(standardizing values)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(fixing invalid values and filter data)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
Week 2	Lecture 3	EDA(public and private data)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(web scraping)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(data types)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(fixing the rows and columns)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(impute/remove missing values)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(handling outliers)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(standardizing values)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	

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Week 2	Lecture 3	EDA(fixing invalid values and filter data)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
	Lecture 4	EDA(public and private data)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(web scraping)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(data types)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(fixing the rows and columns)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(impute/remove missing values)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(handling outliers)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(standardizing values)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(fixing invalid values and filter data)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
Week 3	Lecture 5	EDA(public and private data)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(web scraping)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(data types)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(fixing the rows and columns)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(impute/remove missing values)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(handling outliers)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(standardizing values)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
		EDA(fixing invalid values and filter data)	R-3		It will introduction to EDA	student will learn about EDA	Demonstration using datasets	
	Lecture 6	Univariate analysis (introduction to univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical unordered univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical ordered univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	

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Week 3	Lecture 6	Univariate analysis(statistics on numerical features)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(numeric - numeric analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (correlation vs causation)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (numerical - categorical analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical - categorical analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (multivariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(missing values)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (correlation and causation)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(data visualization)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
Week 4	Lecture 7	Univariate analysis (introduction to univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical unordered univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical ordered univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(statistics on numerical features)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(numeric - numeric analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (correlation vs causation)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	

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Week 4	Lecture 7	Univariate analysis (numerical - categorical analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical - categorical analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (multivariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(missing values)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (correlation and causation)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(data visualization)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
	Lecture 8	Univariate analysis (introduction to univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical unordered univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical ordered univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(statistics on numerical features)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(numeric - numeric analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (correlation vs causation)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (numerical - categorical analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical - categorical analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (multivariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	

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Week 4	Lecture 8	Univariate analysis(missing values)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (correlation and causation)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(data visualization)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
Week 5	Lecture 9	Univariate analysis (introduction to univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical unordered univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical ordered univariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(statistics on numerical features)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(numeric - numeric analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (correlation vs causation)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (numerical - categorical analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (categorical - categorical analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (multivariate analysis)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(missing values)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis (correlation and causation)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	
		Univariate analysis(data visualization)	R-2		It will cover the Univariate analysis	student will learn about Univariate analysis	Demonstration using datasets	

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Week 5	Lecture 10				Online Assignment 1			
Week 6	Lecture 11	Inferential statistics-I (permutations)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (combinations)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (probability: definition and properties)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(types of events)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(rules of probability - addition)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(rules of probability - multiplication)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: basics of probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (random variables)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (expected value)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (summary - basics of probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: discrete probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (binomial distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (binomial distribution (examples))	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (cumulative probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (comprehension: expected value)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: continuous probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	

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Week 6	Lecture 11	Inferential statistics-I (probability density functions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (normal distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (standard normal distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
	Lecture 12	Inferential statistics-I (permutations)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (combinations)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (probability: definition and properties)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(types of events)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(rules of probability - addition)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(rules of probability - multiplication)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: basics of probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (random variables)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (expected value)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (summary - basics of probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: discrete probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (binomial distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (binomial distribution (examples))	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (cumulative probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	

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Week 6	Lecture 12	Inferential statistics-I (comprehension: expected value)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: continuous probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (probability density functions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (normal distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (standard normal distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
Week 7	Lecture 13	Inferential statistics-I (permutations)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (combinations)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (probability: definition and properties)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(types of events)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(rules of probability - addition)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I(rules of probability - multiplication)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: basics of probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (random variables)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (expected value)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (summary - basics of probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: discrete probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (binomial distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	

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Week 7	Lecture 13	Inferential statistics-I (binomial distribution (examples))	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (cumulative probability)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (comprehension: expected value)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (introduction: continuous probability distributions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (probability density functions)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (normal distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-I (standard normal distribution)	R-1		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		SPILL OVER						
Week 7	Lecture 14				Spill Over			
		MID-TERM						
Week 8	Lecture 15	Inferential statistics-II (introduction)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (central limit theorem)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (samples)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling distributions)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (properties of sampling distributions)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(clt - demonstration)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (estimating mean using clt)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (confidence interval - example)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(types of sampling methods)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	

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Week 8	Lecture 15	Inferential statistics-II(uses of sampling in market research)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in market campaigns)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in pilot testing)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in quality control)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(basics of probability)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(joint probability and conditional probability)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (bayes' theorem)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (standardized normal distribution and z - score)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling methods)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling and estimation)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
	Lecture 16	Inferential statistics-II (introduction)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (central limit theorem)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (samples)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling distributions)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (properties of sampling distributions)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(clt - demonstration)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (estimating mean using clt)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (confidence interval - example)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	

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Week 8	Lecture 16	Inferential statistics-II(types of sampling methods)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in market research)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in market campaigns)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in pilot testing)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in quality control)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(basics of probability)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(joint probability and conditional probability)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (bayes' theorem)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (standardized normal distribution and z - score)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling methods)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling and estimation)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
Week 9	Lecture 17	Inferential statistics-II (introduction)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (central limit theorem)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (samples)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling distributions)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (properties of sampling distributions)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(clt - demonstration)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (estimating mean using clt)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	

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Week 9	Lecture 17	Inferential statistics-II (confidence interval - example)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(types of sampling methods)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in market research)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in market campaigns)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in pilot testing)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(uses of sampling in quality control)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(basics of probability)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II(joint probability and conditional probability)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (bayes' theorem)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (standardized normal distribution and z - score)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling methods)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
		Inferential statistics-II (sampling and estimation)	R-3		It will cover the inferential statistics	Student will learn the inferential statistics	Demonstration using datasets	
	Lecture 18				Online Assignment 2			
Week 10	Lecture 19				Online Assignment 2			
	Lecture 20				Online Assignment 2			
Week 11	Lecture 21				Online Assignment 2			
	Lecture 22	Hypothesis testing (understanding hypothesis testing)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(null and alternative hypotheses)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	

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Week 11	Lecture 22	Hypothesis testing(making a decision)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(critical value method)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(critical value method examples)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(the p-value method)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(the p-value method: examples)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(types of errors)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
Week 12	Lecture 23	Hypothesis testing (understanding hypothesis testing)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(null and alternative hypotheses)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(making a decision)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(critical value method)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(critical value method examples)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	

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Week 12	Lecture 23	Hypothesis testing(the p-value method)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(the p-value method: examples)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis testing(types of errors)	R-1 R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
	Lecture 24				Online Assignment 3			
Week 13	Lecture 25	Hypothesis formulation (introduction)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (choosing the representative sample)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (computing the test-statistic)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (finding the critical region)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (making the decision)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (using p-value approach)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (changing the hypothesis)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(t distribution)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(two-sample mean test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(two-sample proportion test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	

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Week 13	Lecture 25	Hypothesis formulation(a/b testing demonstration)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (industry relevance)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (hypothesis testing in python)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (distributions and sampling methods)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (inferential statistics)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (hypothesis testing)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(a/b testing)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(chi-squared test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (ANOVA)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
	Lecture 26	Hypothesis formulation (introduction)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (choosing the representative sample)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (computing the test-statistic)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (finding the critical region)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (making the decision)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (using p-value approach)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	

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Week 13	Lecture 26	Hypothesis formulation (changing the hypothesis)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(t distribution)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(two-sample mean test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(two-sample proportion test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(a/b testing demonstration)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (industry relevance)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (hypothesis testing in python)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (distributions and sampling methods)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (inferential statistics)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (hypothesis testing)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(a/b testing)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(chi-squared test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (ANOVA)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
Week 14	Lecture 27	Hypothesis formulation (introduction)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (choosing the representative sample)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	

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Week 14	Lecture 27	Hypothesis formulation (computing the test-statistic)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (finding the critical region)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (making the decision)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (using p-value approach)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (changing the hypothesis)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(t distribution)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(two-sample mean test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(two-sample proportion test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(a/b testing demonstration)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (industry relevance)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (hypothesis testing in python)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (distributions and sampling methods)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (inferential statistics)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (hypothesis testing)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation(a/b testing)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	

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Week 14	Lecture 27	Hypothesis formulation(chi-squared test)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		Hypothesis formulation (ANOVA)	R-2 R-3		It will cover the Hypothesis testing	student will learn about Hypothesis testing	Demonstration using datasets	
		SPILL OVER						
Week 14	Lecture 28				Spill Over			
Week 15	Lecture 29				Spill Over			
	Lecture 30				Spill Over			

Scheme for CA:

CA Category of this Course Code is:A0203 (2 best out of 3)

Component	Weightage (%)	Mapped CO(s)
Online Assignment 1	50	CO1, CO2
Online Assignment 3	50	CO5, CO6
Online Assignment 2	50	CO3, CO4

Details of Academic Task(s)

Academic Task	Objective	Detail of Academic Task	Nature of Academic Task (group/individuals)	Academic Task Mode	Marks	Allottment / submission Week
Online Assignment 1	It will cover eda and univariate analysis	It will cover week 1 to week 4	Individual	Online	30	5 / 6
Online Assignment 2	It will test the student on Inferential statistics	It will cover week 5 to week 8	Individual	Online	30	8 / 9
Online Assignment 3	It will test student on hypothesis testing	It will cover topics from week 9 to week 11	Individual	Online	30	11 / 12

Detailed Plan For Practicals

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Practical No	Broad topic	Subtopic	Other Readings	Learning Outcomes
Practical 1	List of practical	demonstration of importing dataset from various sources to the jupyter notebook		Students will learn about collecting , cleaning and evaluating data
Practical 2	List of practical	demonstration of importing dataset from various sources to the jupyter notebook		Students will learn about collecting , cleaning and evaluating data
Practical 3	List of practical	demonstration of importing dataset from various sources to the jupyter notebook		Students will learn about collecting , cleaning and evaluating data
Practical 4	List of practical	demonstration of importing dataset from various sources to the jupyter notebook		Students will learn about collecting , cleaning and evaluating data
Practical 5	List of practical	demonstration of importing dataset from various sources to the jupyter notebook		Students will learn about collecting , cleaning and evaluating data
Practical 6	List of practical	analysis of quantity and distribution of data and understanding it by interpreting the columns		Students will learn about collecting , cleaning and evaluating data
Practical 7	List of practical	analysis of quantity and distribution of data and understanding it by interpreting the columns		Students will learn about collecting , cleaning and evaluating data
Practical 8	List of practical	analysis of quantity and distribution of data and understanding it by interpreting the columns		Students will learn about collecting , cleaning and evaluating data
Practical 9	List of practical	demonstrating the use descriptions or comments to describe the finding and storytelling		Students will learn about collecting , cleaning and evaluating data
	List of practical	analysis of data quality issues and perform various techniques for missing value imputation		Students will learn about collecting , cleaning and evaluating data
Practical 10	List of practical	analysis of data quality issues and perform various techniques for missing value imputation		Students will learn about collecting , cleaning and evaluating data
	List of practical	demonstrating the use descriptions or comments to describe the finding and storytelling		Students will learn about collecting , cleaning and evaluating data
Practical 11	List of practical	demonstrating the use descriptions or comments to describe the finding and storytelling		Students will learn about collecting , cleaning and evaluating data
	List of practical	analysis of data quality issues and perform various techniques for missing value imputation		Students will learn about collecting , cleaning and evaluating data

Practical 12	List of practical	analysis of data quality issues and perform various techniques for missing value imputation		Students will learn about collecting , cleaning and evaluating data
	List of practical	demonstrating the use descriptions or comments to describe the finding and storytelling		Students will learn about collecting , cleaning and evaluating data
Practical 13	List of practical	demonstrating the use descriptions or comments to describe the finding and storytelling		Students will learn about collecting , cleaning and evaluating data
	List of practical	analysis of data quality issues and perform various techniques for missing value imputation		Students will learn about collecting , cleaning and evaluating data
Practical 14	List of practical	analysis of data quality issues and perform various techniques for missing value imputation		Students will learn about collecting , cleaning and evaluating data
	List of practical	demonstrating the use descriptions or comments to describe the finding and storytelling		Students will learn about collecting , cleaning and evaluating data
Practical 15	List of practical	understanding the data outliers and remove duplicates and irrelevant data from the dataset		Students will learn about collecting , cleaning and evaluating data
	List of practical	transforming and preparing the data with the right data types using conversion function		Students will learn about collecting , cleaning and evaluating data
Practical 16	List of practical	transforming and preparing the data with the right data types using conversion function		Students will learn about collecting , cleaning and evaluating data
	List of practical	understanding the data outliers and remove duplicates and irrelevant data from the dataset		Students will learn about collecting , cleaning and evaluating data
Practical 17	List of practical	understanding the data outliers and remove duplicates and irrelevant data from the dataset		Students will learn about collecting , cleaning and evaluating data
	List of practical	transforming and preparing the data with the right data types using conversion function		Students will learn about collecting , cleaning and evaluating data
Practical 18	List of practical	transforming and preparing the data with the right data types using conversion function		Students will learn about collecting , cleaning and evaluating data
	List of practical	understanding the data outliers and remove duplicates and irrelevant data from the dataset		Students will learn about collecting , cleaning and evaluating data
Practical 19	List of practical	performing univariate analysis		Students will learn about collecting , cleaning and evaluating data

Practical 19	List of practical	performing categorical unordered univariate and ordered univariate analysis		Students will learn about collecting , cleaning and evaluating data
Practical 20	List of practical	performing categorical unordered univariate and ordered univariate analysis		Students will learn about collecting , cleaning and evaluating data
	List of practical	performing univariate analysis		Students will learn about collecting , cleaning and evaluating data
Practical 21	List of practical	performing univariate analysis		Students will learn about collecting , cleaning and evaluating data
	List of practical	performing categorical unordered univariate and ordered univariate analysis		Students will learn about collecting , cleaning and evaluating data
Practical 22	List of practical	performing categorical unordered univariate and ordered univariate analysis		Students will learn about collecting , cleaning and evaluating data
	List of practical	performing univariate analysis		Students will learn about collecting , cleaning and evaluating data
Practical 23	List of practical	performing univariate analysis		Students will learn about collecting , cleaning and evaluating data
	List of practical	performing categorical unordered univariate and ordered univariate analysis		Students will learn about collecting , cleaning and evaluating data
Practical 24	List of practical	performing categorical unordered univariate and ordered univariate analysis		Students will learn about collecting , cleaning and evaluating data
	List of practical	performing univariate analysis		Students will learn about collecting , cleaning and evaluating data
Practical 25	List of practical	performing bivariate analysis and multivariate analysis		Students will learn about collecting , cleaning and evaluating data
	List of practical	understanding discrete probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
	List of practical	constructing hypothesis around the business problem		Students will learn about collecting , cleaning and evaluating data
Practical 26	List of practical	constructing hypothesis around the business problem		Students will learn about collecting , cleaning and evaluating data
	List of practical	understanding discrete probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
	List of practical	performing bivariate analysis and multivariate analysis		Students will learn about collecting , cleaning and evaluating data
Practical 27	List of practical	performing bivariate analysis and multivariate analysis		Students will learn about collecting , cleaning and evaluating data

Practical 27	List of practical	understanding discrete probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
	List of practical	constructing hypothesis around the business problem		Students will learn about collecting , cleaning and evaluating data
Practical 28	List of practical	constructing hypothesis around the business problem		Students will learn about collecting , cleaning and evaluating data
	List of practical	understanding discrete probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
	List of practical	performing bivariate analysis and multivariate analysis		Students will learn about collecting , cleaning and evaluating data
Practical 29	List of practical	understanding continuous probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
Practical 30	List of practical	understanding continuous probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
Practical 31	List of practical	understanding continuous probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
Practical 32	List of practical	understanding continuous probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
Practical 33	List of practical	understanding continuous probability distributions and demonstrating its applications		Students will learn about collecting , cleaning and evaluating data
Practical 34	List of practical	applying the concepts of central limit theorem on the dataset		Students will learn about collecting , cleaning and evaluating data
Practical 35	List of practical	applying the concepts of central limit theorem on the dataset		Students will learn about collecting , cleaning and evaluating data
Practical 36	List of practical	applying the concepts of central limit theorem on the dataset		Students will learn about collecting , cleaning and evaluating data
Practical 37	List of practical	applying the concepts of central limit theorem on the dataset		Students will learn about collecting , cleaning and evaluating data
Practical 38	List of practical	performing hypothesis testing using critical value and p-value methods		Students will learn about collecting , cleaning and evaluating data
Practical 39	List of practical	performing hypothesis testing using critical value and p-value methods		Students will learn about collecting , cleaning and evaluating data
Practical 40	List of practical	performing hypothesis testing using critical value and p-value methods		Students will learn about collecting , cleaning and evaluating data
Practical 41	List of practical	performing hypothesis testing using critical value and p-value methods		Students will learn about collecting , cleaning and evaluating data

Practical 42	List of practical	performing hypothesis testing using critical value and p-value methods		Students will learn about collecting , cleaning and evaluating data
	SPILL OVER			
Practical 43	Spill Over			