

Course code	Course title	Course outcome
20USTC1	<b>DESCRIPTIVE STATISTICS</b>	<b>1. know</b> the basic concepts in sample surveys and data.
		<b>2. illustrate</b> the knowledge of framing Questionnaire.
		<b>3. calculate</b> the various descriptive measures.
		4 .organize, present and <b>analyse</b> the collected data.
		<b>5. visualise</b> the distribution of data and interpret accordingly.
20USTC2	<b>CORRELATION &amp; REGRESSION ANALYSIS</b>	<b>1. recall</b> the distribution and fitting of the data.
		<b>2. describe</b> the relationship and the direction of association between two variable
		<b>3. analyse</b> and predict the future outcomes.
		<b>4. differentiate</b> correlation and regression.
		<b>5. extend</b> the acquired knowledge to find relationship between more than two variables.
20USTSQC1	<b>SKILL BASED- I: DATA ANALYSIS USING EXCEL</b>	1. be <b>familiar</b> with presentation of Statistical output in MS – Excel software.
		<b>2. understand</b> the basic working of MS–Excel .
		3. enter, <b>organize</b> and save data in suitable way.
		<b>4. conduct</b> descriptive and basic inferential statistics in software.
		<b>5. create</b> and edit graphical displays of data.
20USTC3	<b>PROBABILITY THEORY</b>	<b>1. understand</b> the axiomatic formulation of modern probability theory and random variables.
		<b>2. illustrate</b> probability models and function of random Variables
		<b>3. evaluate</b> and <b>apply</b> moments, characteristic functions

		and random phenomenon.
		<b>4.derive</b> the probability distributions relevant to functions of random variables
		<b>5.convert</b> real-world problems into probability models.
<b>20USTC4</b>	<b>DISTRIBUTION THEORY</b>	<b>1.recall</b> the basic properties of probability theory
		<b>2.perform</b> calculations relating to probability distributions for discrete and continuous random Variables
		<b>3.evaluate</b> and <b>interpret</b> various properties of both discrete and continuous distributions (i.e) mean, variance, M.G.F. etc.
		<b>4.apply</b> distributions theory in real-life problems
		<b>5.develop</b> complex mathematical reasoning
<b>20USTSQ2</b>	<b>SKILL BASED–II: Data analysis using SPSS</b>	1.be <b>familiar</b> with presentation of Statistical output in SPSS software.
		<b>2.understand</b> the basic working of SPSS .
		3.enter, <b>organize</b> and save data in suitable way.
		<b>4.conduct</b> descriptive and basic inferential statistics in software.
		<b>5.create</b> and edit graphical displays of data.
<b>20USTQC1</b>	<b>CORE PRACTICAL - I</b>	<b>1.construct</b> the frequency table.
		<b>2.draw</b> the diagram and graph based on the data.
		<b>3.analyse</b> the central tendency dispersion of the data.
		<b>4.understand</b> the differences between variables.
		<b>5.form</b> the regression equations.
<b>19USTC5</b>	<b>Introduction to Real Analysis and Linear Algebra</b>	<b>1.Understand</b> the basic concepts of Real number system
		<b>2.Understand</b> the axioms and theorems on sequences.
		<b>3.Solve</b> the limits for the function.

		<p><b>4. Recall</b> the concepts of vector space.</p> <p><b>5. Evaluate</b> different concepts of linear Transformation</p>
<b>19USTC6</b>	<b>SAMPLING THEORY</b>	<p><b>1. understand</b> the principles and theory of probability sampling.</p> <p><b>2. understand</b> the concepts of bias and sampling variability and strategies for removing them.</p> <p><b>3. analyse</b> data from surveys using various sampling plans .</p> <p><b>4. access</b> the appropriateness of sampling plans</p> <p><b>5. evaluate</b> the different methodology to estimate population parameters for sampling plans.</p>
<b>19USTSC1</b>	<b>SKILL BASED –III: DEMOGRAPHIC METHODS</b>	<p>1. be <b>familiar</b> with the source of vital statistics.</p> <p><b>2. calculate</b> basic measures to evaluate vital statistics.</p> <p><b>3. determine</b> fertility and mortality rates.</p> <p><b>4. derive</b> information from the life tables.</p> <p><b>5. construct</b> life tables.</p>
<b>19USTSC7</b>	<b>APPLIED STATISTICS</b>	<p>1. be <b>familiar</b> with the concepts of time series</p> <p><b>2. forecast</b> the trends and seasonal variations</p> <p><b>3. Understand</b> the concepts of index numbers</p> <p><b>4. solve</b> various problems on index numbers</p> <p><b>5. Apply</b> the concepts of time series and index numbers in real life situation</p>
<b>19USTEC1</b>	<b>MAJOR ELECTIVE I: NUMERICAL ANALYSIS</b>	<p><b>1. aware</b> of using numerical methods in modern scientific computing.</p> <p><b>2. apply</b> numerical methods to obtain appropriate solution to mathematical problem.</p> <p><b>3. analyse</b> and <b>evaluate</b> the accuracy of common numerical methods.</p> <p><b>4. derive</b> numerical methods for various operator such as interpolation, differentiation, integration, etc.</p>

18USTSQ3	<b>SKILL BASED IV: DATA ANALYSIS USING R</b>	1.Be <b>familiar</b> with presentation of Statistical output in R Programming.
		<b>2.understand</b> the basic working of R
		3.enter, <b>organize</b> and save data in suitable way.
		<b>4.conduct</b> descriptive and basic inferential statistics.
		<b>5.create</b> and edit graphical displays of data.
18USTC9	<b>THEORY OF ESTIMATION</b>	1.have <b>knowledge</b> about fundamental principles of statistical inference
		<b>2.Explain</b> the notion of parametric model on point estimation
		<b>3.demonstrate</b> computational skills to implement various statistical inferential approaches.
		<b>4.explore</b> different methods of estimating the parameters
		<b>5.construct</b> point and interval estimators.
18USTC10	<b>STOCHASTIC PROCESSES</b>	<b>1.understand</b> basic concepts of Stochastic processes.
		<b>2.implement</b> and <b>apply</b> appropriate stochastic models.
		<b>3.calculate</b> transition probability matrix.
		<b>4.communicate</b> stochastic models clearly, in verbal form, using appropriate statistical terminology.
18USTC11	<b>ACTUARIAL STATISTICS</b>	<b>1.recognize</b> the important role of statistical principles and their application in actuarial sciences.
		<b>2.analyse</b> and interpret actuarial and statistical information
		<b>3.justify</b> and <b>communicate</b> the necessary skills for dealing with organization teams and policy issues.
		4.critically engage with and <b>evaluate</b> actuarial and statistical problems.
		<b>5.develop</b> insight in insurance and financial markets.
18USTEC2	<b>MAJOR ELECTIVE – II: LINEAR PROGRAMMING</b>	<b>1.Define</b> and <b>formulate</b> linear programming problems

	<b>AND ITS APPLICATION</b>	<p><b>2.solve</b> linear programming problems using optimization methods.</p> <p><b>3.Solve</b> specialized programming problems like transportation and assignment problems.</p> <p><b>4.identify</b> best techniques to solve specific problems.</p> <p><b>5.develop</b> general understanding of operational research approach in decision making.</p>
<b>18USTC12</b>	<b>TESTING OF HYPOTHESIS</b>	<p><b>1.demonstrate</b> their understanding of mathematics in statistical inference</p> <p><b>2.check</b> the validity of each testing methods.</p> <p><b>3.associate</b> with the estimate to draw inference.</p> <p><b>4.derive</b> the distributional results needed for statistical inference</p>
<b>18USTC13</b>	<b>DESIGN OF EXPERIMENTS</b>	<p>1.critically <b>review</b> the concepts of experimental designs</p> <p><b>2.understand</b> the issues and principles of design of experiments</p> <p><b>3.recognize</b> appropriate design to be followed</p> <p><b>4.analyse</b> the data collected based on the designing principle used and its underlying assumptions.</p> <p><b>5.interpret</b> statistical results from an experiment and report them in non- technical language</p>
<b>18USTC14</b>	<b>INDUSTRIAL STATISTICS</b>	<p><b>1.understand</b> the philosophy and basic concepts of quality improvement.</p> <p><b>2.demonstrate</b> use of methods of statistical process control.</p> <p><b>3.design,</b> use and <b>interpret</b> different control charts.</p> <p><b>4.face</b> the real challenges in industries.</p>
<b>18USTEC3</b>	<b>MAJOR ELECTIVE–III: DECISION THEORY AND ITS APPLICATION</b>	<p><b>1.propose</b> the best strategy using decision making methods under uncertainty and game theory.</p> <p><b>2.formulate</b> and <b>solve</b> problems in the form of networks and graphs.</p> <p><b>3.solve</b> problems logically,</p>

		critically, analytically and creatively.
		<b>4.use</b> CPM and PERT techniques to plan, schedule and control project activities.
		<b>5.report</b> and <b>interpret</b> findings in scientific and concise manner.
<b>18USTQC1</b>	<b>CORE PRACTICAL</b>	<b>1.understand</b> the concepts of testing of hypothesis and statistics used in industries.
		<b>2.design,</b> use and <b>interpret</b> different control charts.
		<b>3.check</b> the validity of each testing methods.
		<b>4.associate</b> with the estimate to draw inference.
		<b>5.face</b> the real challenges in industries.
<b>18UCSAC3</b>	<b>ALLIED: STATISTICAL METHODS – I</b>	<b>1.understand</b> the basic statistical methodologies
		<b>2.apply</b> a range of statistical techniques based on theory and concepts.
		<b>3.relate</b> statistics to real life problems.
		<b>4.communicate</b> meaningfully and productively with others.
		<b>5.fit</b> a linear model and show how much it is related
<b>19UCSAC4</b>	<b>ALLIED: STATISTICAL METHODS – II</b>	<b>1.recall</b> different statistical methodologies.
		<b>2.test</b> and <b>estimate</b> the parameters.
		<b>3.examine</b> suitable statistical tools.
		<b>4.conclude</b> with well-defined inference.
		<b>5.integrate</b> theoretical concepts with real life problems.
<b>19USTNEC1</b>	<b>NME – I : SURVEY METHODLOGY</b>	<b>1.know</b> the basic concepts in sample surveys and data.
		<b>2.obtain</b> the knowledge of framing Questionnaire.
		<b>3.organize,</b> manage and <b>present</b> the collected data .
		<b>4.explore</b> the data in forms of tables, diagrams and graphs.
		<b>5.visualise</b> the data collected and interpret.
<b>18USTNEC2</b>	<b>NME – II: BUSINESS</b>	<b>1.apply</b> various statistical

	<b>STATISTICS</b>	techniques related to business
		<b>2.identify</b> the business data and present it precisely
		<b>3.organize</b> and <b>summarize</b> the business data using descriptive statistics
		<b>4.predict</b> the relevant relationship between business variables