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| **Week** | **Theory Contents/Topics** | **Sections** | **CLO** | **Tools** |
| 1 | **Statistics and its types, Basic terms, summation notation,**  **Organizing and graphing qualitative data.**( Frequency distribution table, bar graph, Pareto chart) | **1.1 to 1.5,**  **1.7,2.1**  *Q[1.6,1.9,1.10,1.19,1.37-1.39, 2.3-2.7]* | 1 |  |
| 2 | **Organizing and graphing quantitative data**.(FDT, Less-Than Method for Writing Classes, Histogram, polygon, frequency curve, Single-Valued Classes, Cumulative Frequency Distribution, Shapes of Histograms)  **Stem-and-Leaf display**, split stem-and-leaf display  **Measures of the center of ungrouped data**. (Mean, Median, Mode, unimodal, multimodal data, Trimmed Mean, Weighted Mean, Relationships Among the Mean, Median, and Mode) | **2.2 to 2.3, 3.1**  *Q[2.11-2.22,*  *2.26-2.30, 3.10-3.21,*  *3.22,3.27,*  *3.32-3.45]* | 1 | A1,Q1 M1, F |
| 3 | **Measure of Dispersion of ungrouped data** (Range, Variance and Standard Deviation, deviation of the x value from the mean, Coefficient of Variation, Population Parameters and Sample Statistics)  **Mean, Variance and standard deviation for grouped data.**  **Use of standard deviation.** (Chebyshev’s theorem, Empirical Rule)  **Measure of position**. (Quartiles and Interquartile Range, Percentiles and Percentile Rank)  **Box-and-Whisker plot.** | **3.2 to 3.6**  *Q[3.46-3.53,*  *3.56-3.64,*  *3.69-3.73,*  *3.75-3.80]* | 1 |  |
| 4 | **Experiment, Outcome, Sample space**  **Calculating Probability**,  Marginal Probability, Conditional Probability and related concepts | **4.1 to 4.3**  *Q[4.4 to 4.10,*  *4.16 to 4.28]* | 2 |  |
| 5 | Intersection of events and Multiplicative rule,  Union of events and addition rule,  Counting rule, factorial, combination and permutation. | 4.4 to 4.6 | 2 |  |
|  | **1st Mid Term Exam** |  |  |  |
| 6 | Random Variable,  probability distribution of discrete random variable, mean and standard deviation . | 5.1 to 5.3 | 2 |  |
| 7 | Binomial probability distribution  Hypergeometric probability distribution  Poisson Probability distribution | 5.4 to 5.6 |  |  |
| 8 | Continuous Probability Distributions and Normal probability distribution  Standardizing a Normal Distribution  Application of the Normal Distribution | 6.1 to 6.3 | 2 |  |
| 9 | Determining the z and x Values When an Area Under the Normal Distribution Curve Is Known.  The Normal Approximation to the Binomial Distribution.  Joint Probability Distribution, marginal distribution (CLO-2) | 6.5, 6.6  WP[3.4] | 2 |  |
| 10 | Mathematical Expectations:  Mean & Variance of a Random Variable, Covariance, and Correlation (CLO-2) | WP [4.1, 4.2] | 2 | A2, Q2,M2, F |
|  | **2nd Mid Term Exam** |  |  |  |
| 11 | **Estimation & Hypothesis Testing:**  Introduction, confidence interval estimation using z & t distributions for single mean and difference between two means,Testing of hypothesis for single mean and difference between two means using z-test (CLO-3), p-value method (CLO-3) | WP [ 9.1 to 9.5, 9.8, 10.1 to 10.5] | 2, 3 |  |
| 12 | **Independent & Dependent sample tests:**  One-sample t-test, independent and depenent sample t-tests, confidence intervals (CLO-3) | WP [ 9.1 – 9.5, 9.8, 10.1 – 10.5] | 3 | A3,Q3, F |
| 13 | **Regression & Correlation:**  Scattered diagram (CLO-2). Introduction to linear regression.  The simple linear regression model (CLO-3),  Simple Correlation (CLO-2), coefficient of determination (CLO-2) | WP [ 11.1 – 11.3. 11.12] | 2, 3 |  |
| 14 | **Multiple linear Regression:**  Multiple regression (CLO-3) and correlation (CLO-2) , coefficient of determination (CLO-2), assumptions (CLO-2) | WP [12.1 – 12.2] | 2, 3 |  |
| 15 | **Analysis of variance:**  ANOVA (CLO-3) | WP [13.1, 13.2] | 3 |  |
|  | **Final Exam** |  |  |  |