| **Week** | **Theory Contents/Topics** | **Sections** | **CLO** | **Tools** |
| --- | --- | --- | --- | --- |
| 1 | Statistics and its types, Basic terms, summation notation,  Organizing and graphing qualitative data. | 1.1-1.5,  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.  Stem-and-Leaf display,  Measures of the center of ungrouped data. | 2.2-2.3.  3.1  *Q[2.11-2.22,*  *2.26-2.30, 3.10-3.21*] | 1 | A1,Q1 M1, F |
| 3 | Measure of Dispersion of ungrouped data.  Mean, Variance and standard deviation for grouped data.  Use of standard deviation.  Measure of position.  Box-and-Whisker plot. | 3.2-3.6 | 1 |  |
| 4 | Experiment, Outcome, Sample space  Calculating Probability,  Marginal Probability, Conditional Probability and related concepts | 4.1-4.3 | 2 |  |
| 5 | Intersection of events and Multiplicative rule,  Union of events and addition rule,  Counting rule, factorial, combination and permutation. | 4.4-4.6 | 2 |  |
| 6 | **1st Mid Term Exam** |  |  |  |
| 7 | Random Variable,  probability distribution of discrete random variable, mean and standard deviation . | 5.1-5.3 | 2 |  |
| 8 | Binomial probability distribution  Hypergeometric probability distribution  Poisson Probability distribution | 5.4-5.6 |  |  |
| 9 | Continuous Probability Distributions and Normal probability distribution  Standardizing a Normal Distribution  Application of the Normal Distribution | 6.1-6.3 | 2 |  |
| 10 | 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 |  |
| 11 | Mathematical Expectations:  Mean & Variance of a Random Variable, Covarriance, and Correlation (CLO-2) | WP [4.1, 4.2, 3.4] | 2 | A2, Q2,M2, F |
| 12 | **2nd Mid Term Exam** |  |  |  |
| 12 | **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 – 9.5, 9.8, 10.1 – 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 |
| 14 | **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 |  |
| 15 | **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 |  |
| 16 | **Analysis of variance:**  ANOVA (CLO-3) | WP [13.1, 13.2] | 3 |  |
| 17 | **Final Exam** |  |  |  |