

## MID-1 ( Detail syllabus )

Week	Theory Contents/Topics	Sections		Tools
1	<b>DESCRIPTIVE STATISTICS:</b> Basic definition, Types of data and variables, <i>Measure of central tendency:</i> Mean, Median, Mode and their relations, construction of frequency and Relative frequency distribution table. <i>Measure of dispersion:</i> Variance and Standard Deviation of population and sample , Quartiles, Deciles, Percentiles, IQR, Range , Coefficient of variation , Uses of calculator	NW 2.1 – 2.4 3.1 – 3.4		Mid Quizzes  Final
2	<b>GRAPHICAL REPRESENTATION OF DATA:</b> Construction of pie and bar chart, Histograms, frequency polygon, frequency curve, Stem-leaf plots, Dot plot , Box and modified Box plot, Trimmed mean Ogive (less than, more than) <i>Measure of shapes:</i> Skewness and Kurtosis. Z-score		A1 Q1	
3	<b>SAMPLE SPACE AND EVENT:</b> Sample point, tree diagram, set theory , Venn diagram	WP 2.1 – 2.3		
4	Counting techniques, Combination and permutation, distinct and circular permutation, Probability of an event, Additive rules	WP 2.4 – 2.5		
5	<b>AXIOMS OF PROBABILITY:</b> Conditional Probability, Independence and Multiplicative rules. Bayes' Rules	WP 2.6 – 2.7	Q2	

### Major Characteristics:

#### Mode

1. It is the most frequent or probable measurement in the data set.
2. There can be more than one mode for a data set.
3. It is not influenced by extreme measurements.
4. Modes of subsets cannot be combined to determine the mode of the complete data set.
5. For grouped data its value can change depending on the categories used.
6. It is applicable for both qualitative and quantitative data.

#### Median

1. It is the central value; 50% of the measurements lie above it and 50% fall below it.
2. There is only one median for a data set.
3. It is not influenced by extreme measurements.
4. Medians of subsets cannot be combined to determine the median of the complete data set.
5. For grouped data, its value is rather stable even when the data are organized into different categories.
6. It is applicable to quantitative data only.

#### Mean

1. It is the arithmetic average of the measurements in a data set.
2. There is only one mean for a data set.
3. Its value is influenced by extreme measurements; trimming can help to reduce the degree of influence.
4. Means of subsets can be combined to determine the mean of the complete data set.
5. It is applicable to quantitative data only.