Tentative Programme Schedule of One Week Workshop on RESEARCH METHODOLOGY AND DATA ANALYSIS FOR COMMERCE & MANAGEMENT IN COLLABORATION WITH SPSS SOUTH ASIA BANGALORE organised by the Department of Commerce, Saurashtra University, Rajkot from 05/06/2017 to 11/06/2017

Day 1 – 05/06/2017, Monday
10:30 am to 11:25 am Inaugural Function
11:25 am to 12:25 pm -Session 1
12:30 pm to 01:30 pm -Session 2
1:30pm to 2:30pm LUNCH BREAK
2:30 pm to 3:30 pm- Session 3
3:35 pm to 4:35 pm- Session 4

Types of Data and Scale of Measurements
- Primary and Secondary Data
- Cross Section, Time Series, Panel Data
- Cardinal and Ordinal Data which includes Ratio, Interval, Nominal and Ordinal Scale

Questionnaire as part of primary data collection
- General guidelines for questionnaire preparation
- Types and structure of Questions
- Pilot testing

Day 2- 06/06/2017, Tuesday
11:25 am to 12:25 pm -Session 1
12:30 pm to 01:30 pm -Session 2
1:30pm to 2:30pm LUNCH BREAK
2:30 pm to 3:30 pm- Session 3
3:35 pm to 4:35 pm- Session 4

Population and Sampling Technique
Probabilistic Sample
- Simple Random Sample
- Systematic Random Sample
- Stratified Sample
- Cluster Sample
- Multistage Cluster Sample

Non probabilistic Sample
- Convenience Sample
- Quota Sample
- Judgmental Sample [Expert opinion sample]
- Snow ball sample [Referred sample]

Calculating ideal sample size
Introduction of SPSS / IBM SPSS Statistics
- Coding
- Decoding
- Editing
- Data entry, Data file etc

**Day 3- 07/06/2017- Wednesday**

11:25 am to 12:25 pm -Session 1  
12:30 pm to 01:30 pm -Session 2  
1:30pm to 2:30pm LUNCH BREAK  
2:30 pm to 3:30 pm- Session 3  
3:35 pm to 4:35 pm- Session 4

**Frequency Distribution along with Graphs**

**Descriptive Statistics**
- Mean (Arithmetic Mean, Geometric Mean, Harmonic Mean, Combined Mean/ Group Mean, Weighted Mean, Trimmed Mean), Median, Mode,

**Measures of dispersions**
- Maximum, Minimum, Range, Mean Deviation, Standard Deviation, Coefficient of Variation, Skewness, Kurtosis etc

**Reliability Test**
- Internal consistency of instrument
- Cronbach’s Alpha

**Day 4- 08/06/2017- Thursday**

11:25 am to 12:25 pm -Session 1  
12:30 pm to 01:30 pm -Session 2  
1:30pm to 2:30pm LUNCH BREAK  
2:30 pm to 3:30 pm- Session 3  
3:35 pm to 4:35 pm- Session 4

**Cross tabulation with Chi-square test**
- Two by Two cross tabulation
- K by k cross tabulation
- Phi coefficient
- Cramer’s V

**Multiple Response Analysis**
- Frequency distribution for multiple response
- Cross tabulation for multiple response

**Day 5- 09/06/2017- Friday**

11:25 am to 12:25 pm -Session 1  
12:30 pm to 01:30 pm -Session 2  
1:30pm to 2:30pm LUNCH BREAK  
2:30 pm to 3:30 pm- Session 3  
3:35 pm to 4:35 pm- Session 4
Testing of Normality
- Normality and its features with importance
- Nine different ways to test for normality including graphical methods and scientific tests
- Kolmogorov-Smirnov
- Shapiro-Wilk tests
- Stem-and-Leaf Plot
- Normal Q-Q Plot
- Detrended Normal Q-Q Plot
- Box plot

Hypothesis testing
Parametric Hypothesis testing and Non Parametric Hypothesis testing
- t-test for comparing mean
- One sample t test
- Independent sample t test
- Paired sample t test
- One Way ANOVA

Non-Parametric Hypothesis testing
- Mann-Whitney U
- Wilcoxon Rank Sum Test
- Kruskal Wallis test
- Friedman test

Day 6- 10/06/2017- Saturday
11:25 am to 12:25 pm -Session 1
12:30 pm to 01:30 pm -Session 2
1:30pm to 2:30pm LUNCH BREAK
2:30 pm to 3:30 pm- Session 3
3:35 pm to 4:35 pm- Session 4

Bivariate and Multivariate Correlation
- Scatter diagramme [Checking for linearity]
- Bivariate correlation
- Pearson method
- Spearman method
- Kendall’s tau-b
- Multiple correlation
- Partial Correlation

Regression Analysis - I
Bivariate Regression
- Difference between correlation and regression
- Estimation of Regression line
- Interpretation of R-square, F-test, Beta coefficient, t-test and its associate significance value
Day 7- 11/06/2017- Sunday

11:25 am to 12:25 pm -Session 1
12:30 pm to 01:30 pm -Session 2
  1:30pm to 2:30pm LUNCH BREAK
2:30 pm to 3:30 pm- Session 3
3:35 pm to 4:35 pm- Session 4

Regression Analysis – II
- Multiple regression Analysis
- Multiple Regression with quantitative and qualitative exploratory variables
- Interpretation of R bar-square, F-test, Beta coefficient, t-test and its associate significance value

Multivariate Analysis
Factor Analysis
- Exploratory factor analysis

Cluster Analysis

Discriminant Analysis

4:40pm to 5:30pm- Valedictory Function

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Total Days: Seven

Resource Person / Course Instructor
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