EASTERN MEDITERRANEAN UNIVERSITY
Department of Industrial Engineering
IENG385 Statistical Engineering
Project Guideline: Fall 2019-20

Find a real process (manufacturing or service oriented) with six variables and at least 60 observations for each variable.

Final Project report consists of:

- **Cover Page**
- **List of contents**
- **List of tables**
- **List of figures**
- **Your motivation (why do you want to collect this data?, what is problem? What do you want to do? , …)**
- **Basic information about that company (field & type of production, employees, organizational chart, …) in only one page**
- **Chapter 1: Descriptive statistics for only one variable with 60 observations (Number of intervals, Class interval, Frequency table, Relative frequency table, Bar graph, Line graph, pie graph, Histogram and type of symmetry and also Mean value, Median, Mode, Variance, Standard deviation, Range. Add brief explanation to your tables and graphs)**

- **Chapter 2: (Population size=60, Sample size=15,Confidence coefficient=0.90)**
  Confidence interval of: (Two-sided, Upper bound, lower bound for all cases)
  - **2-1 Mean value (all situations)**
  - **2-2 Difference between two means (all situations)**
  - **2-3 One proportion**
  - **2-4 Difference between two proportions**
  - **2-5 One variance**

2-6 Ratio of two variances

- **Chapter 3: (Choose appropriate null and alternative hypothesis accorfing to values of your vatiable/variables, level of significance=0.1)**
- **Hypothesis testing of (Two-sided, Upper side, lower side for all cases)**

3-1 Mean value (all situations)

3-2 Difference between two means (all situations),

3-3 One proportion

3-4 Difference between two proportions,

3-5 Single variance

3-6 Equality of two variances

- **Chapter 4: Checking fit ability of different distributions (Uniform, Poisson, Exponential, Binomial) to one variable**

- **Chapter 5: Regression (b_0, b_1, regression line, estimating dependent variable with one value of independent variable, plot of residuals, Coefficient of determination, Checking $E(e_i) = 0$, Constructing normal probability plot with details)**

- **Chapter 6: Analysis of variance**
- **Chapter 7: Conclusion**

Project hour of instructor: Fridays between 8:30-10:30

Deadline of mailing first part (Introduction, Chapter 1 and 2): 8th November

Deadline for delivery of completed project: 30th December

There is penalty for late submission

Note 1: Using statistical softwares (SPSS, Minitab, …) are not allowed

Note 2: Using spreadsheet softwares (Excel, Word, …) are allowed