Your Name

Instructor Name

Course Number

Date

Essay: Statistical Concepts

Engineers analyze and solve numerous problems involving statistical models and data, on a daily basis which proves the great value of Statistics in the domain of Engineering.

**Practical Uses**

Statistics has multiple and wide ranges of applications in the fields of Science and Engineering. The sources explained below supports their usefulness to solve complex engineering problems, by particularly connecting the discussion to some common measurements, like measurement of the volume of three-dimensional shapes.

[*Measurements of Vibration Levels*](https://www.stem.org.uk/resources/elibrary/resource/25401/monitoring-vibration-levels-steam-turbines)

These measurements provide the students with an opportunity to explore the numerous applications of statistics and mathematics within the industry of electrical and mechanical engineering, as the vibration levels measured are of Steam Turbines. This process requires the use of different statistical models for setting an alarm to detect any diversions in the vibration level from the optimal/normal value. The purpose of this alarm is to avoid any kind of failure and loss in revenue, by immediately indicating the problem. This allows corrective action to be taken, as soon as the problem arises. However, this particular activity demands the calculation of the probability and the total number of false alarms. The students can successfully accomplish this task by:

* understanding the basic concepts of mathematical modeling
* understanding numerous functions and their graphs mathematically
* understanding the use of probability as a measurement of possibility
* defining some basic engineering problems in the mathematical context

[*Recording Engineers' Data*](https://www.stem.org.uk/resources/elibrary/resource/25390/study-engineers-data-1)

This process requires students to use the application of statistics and mathematics to record the total volume of registered engineers. The students will use different graphs and Statistical calculations to describe the variations and differences in the total number of memberships, over time. Following tasks need to be accomplished by the students to complete this activity:

* Calculate the mean and median of the provided set of data
* Use different software to plot graphs