The understanding and use of statistics are becoming more and more important to businesses. Quality initiatives such as Six Sigma base corporate decisions on the information provided through statistics.

Statistics is science’s method to organize, characterize and summarize data so that one can use the information to draw conclusions and/or predictions.

This presentation module introduces the basic concepts of Statistics to the engineering students. It starts with the basic definition and steps of descriptive statistics. Population and sample are differentiated as well as nominal, ordinal, interval and ratio scales. Common numerical measurements such as mean, median, mode, range, variance, standard deviation and percentile are defined.

Next, the presentation describes the use of probability to predict an outcome.

Two different types of distributions are given as continuous distribution and discrete distribution. The presentation then uses Z-scores from the normal probability table to determine the probability of occurrence.

Finally, the module discusses capability index, Cp and Cpk. An example of the difference of each is given for further clarification.