**Statistics**

The mean and standard deviation of the weight of the participants, the loads the participants will carry, and the metabolic cost will be calculated to summarize and organize the characteristics of our data set. Boxplots will be used to visualize the distribution of measured metabolic costs and identify outliers. Standard deviation will be used to detect and remove outliers from the metabolic cost data. If our groups of data came to be dependent using correlation analysis, we will conduct a Repeated Measures ANOVA test. If our groups of data are independent, the Anderson-Darling test will be used to check whether our data is normally distributed and the data is not normally distributed .If our groups of data have equal variance determined using Levene’s test for variance, we will use classical Fisher’s ANOVA test to determine whether the differences between groups of data are statistically significant. If the groups of data have unequal variance, we will use Welch’s ANOVA test to determine the statistical significance. For our research project, we will be using a 95% confidence interval and if we get a lesser confidence level we will reject our null hypothesis. Pearson correlation test will be used to determine the correlation between our parameters i.e. load, inclination, and heel angle, and target variable i.e. metabolic cost.