## Student Project 2 – Weighting 18%

**DUE : submit via Turnitin by 5pm Friday 9th October (week 12)**

## Part I

1. Select two explanatory (independent) variables (factors) from your project dataset.

2. Select a **response (dependent) variable** (a continuous variable) you find interesting and believe may be explained by the two variables you selected in 1.

3. **In Part I** of your report **clearly state** **and describe/explain:**

* your project data set (define all variables, including units if numerical and levels if factors);
* the **two explanatory variables** and the **response variable** you have selected;

* Include some relevant EDA (graphs, tables, etc.) of your data. Don’t forget to label figures and tables, and include a discussion of these figures and tables in the body of the report.

## Part II

Corresponding to the variables you have selected in Part I, clearly state:

the **research question** you will answer;

the **statistical hypotheses** you will be testing (list all hypotheses - interaction hypothesis and the main effects hypotheses).

the preliminary and factorial models for your selected variables. Describe in **full** **detail** all components of the **preliminary** and **factorial** models;

the preliminary and factorial projected ANOVAs.

## Part III

Carry out the factorial ANOVA analysis using R.

Clearly present:

the **relevant** R code and output (i.e the aov (and LSD if appropriate) code from the script file and the ANOVA (and LSD if appropriate) results from the output);

the **results** of your hypothesis testing;

an **interpretation** of the results:

If you find a significant interaction, present and interpret an interaction plot - you do not have to interpret the interaction using LSD.

If there is no interaction but one or both of the main effects are significant, determine which means differ using LSD in R and discuss.

If you find no significant results, discuss why this may be so.

**BE SURE TO INCLUDE YOUR NAME, STUDENT NUMBER AND SIGNATURE ON YOUR PROJECT.**