AGEC 317

Problem Set 3

This problem set refers to the Excel document "PS3.xlsx"

Please complete the work for this Problem Set within the "PS3.xlsx" document, and submit your edited version with answers to eCampus by **February 17th at 11:59PM**.

1. See the sheet entitled "Study". Here you have 25 observations of 1) the number of hours each student spent studying each week (*study*), and 2) each student's score on the final exam (*score*). **Without using the Data Analysis regression tool**, find $\hat{\beta}_0$ and $\hat{\beta}_1$ in the following model:

   $$score_i = \beta_0 + \beta_1(study_i)$$

   Use the formula for $\hat{\beta}_0$ and $\hat{\beta}_1$ we derived in class.

2. See the sheet entitled "ColGPA". Here you have 25 observations of 1) the number of hours each student spent studying each week (*study*), and 2) each student's current college GPA ($ColGPA$). **Without using the Data Analysis regression tool**, find $\hat{\beta}_0$ and $\hat{\beta}_1$ in the following model:

   $$score_i = \beta_0 + \beta_1(ColGPA_i)$$

   Use the formula for $\hat{\beta}_0$ and $\hat{\beta}_1$ we derived in class.

3. See the sheet entitled "Excel Reg". Estimate the model from #1 using the Data Analysis ToolPak, **and place the regression output in the same sheet**

4. After estimating $\hat{\beta}_0$ and $\hat{\beta}_1$, highlight the coefficients in the model that are statistically significant. Use red or yellow to highlight.

5. At the top of the "Excel Reg" sheet, please write in words what the marginal effect of studying is on final test scores according to your model.