Assignment #1:

Student Learning Outcome: **Analyze and interpret relevant information**

To analyze and interpret relevant information, Students will be randomly assigned to a group, consisting of approximately 6 students. Working collaboratively, they will conduct a simple statistical study to answer a research question pertaining to a real life issue or problem.

In conducting the study, students will:

1. Identify the population pertaining to the research question and develop a survey for collecting sample data, using a particular sampling strategy.

2. Collect and tabulate survey data for analysis.

3. Analyze, and interpret data by:

   1. Constructing frequency tables, generating graphs and charts, calculating measures of central tendency, variation and position.

   2. Estimating population parameters, constructing confidence intervals, calculating sample sizes, and interpreting correlation coefficients.
Assignment #2:

Student Learning Outcome: Evaluate information to determine credibility of reasoning

Using the survey data they have collected, students will:

1. Conduct one or more hypothesis tests to answer their research questions identified in 1.2 above. They will:
   
   i) Identify the null hypothesis and the alternative hypothesis, and express them both in symbolic form
   ii) Calculate the value of the test statistic.
   iii) Identify the critical value(s)
   iv) Determine the p-value
   v) State the conclusion

2. Evaluate the findings from the hypothesis tests to determine whether their original claim can be supported or not.
Assignment #3:

Student Learning Outcome: *Generate well-reasoned conclusions*

Using the results of the hypothesis tests conducted, students will:

1. Present the findings of their research study to the class via a PowerPoint presentation. Were original beliefs supported or not? What conclusions can be drawn from the study?

2. Discuss the implications of the findings. What factors could have influence the results observed? How can this issue be addressed?

3. What are some things you like about the group research project?

4. What are some things you did not like about the group research project?

*Contributed by Professor Deoraj Bharath, PhD*