Final Project

For the final project, you will have the opportunity to analyze real data courtesy of the MBEA project. See the attached file containing the results of bat capture data. The YouTube playlist has a video explaining the data and the project in more detail as well as tips for using the excel analysis tool pack add in, so be sure to watch it. http://youtu.be/hwEEoy8GCfc

First you will need to create

- At least 3 graphs – They can be histograms, scatterplots, pie graphs, whatever makes sense to analyze the data at hand.
- At least 3 hypothesis tests or confidence intervals – You can test anything that looks interesting to you. **See the video for examples and suggestions.**
- At least 3 correlation coefficients – You can test anything that looks interesting to you. **See the video for examples and suggestions.**

Next write a report explaining your results (which might be that you can say something interesting about the data, or might be that your tests were inconclusive). Why do you think you got the results you did? If you one or more tests or graphs were inconclusive, explain why you think that was. Would collecting more samples make a difference, or do you think there really isn't a significant relationship?

Finally, include 2 examples of how the material from the second half of this course could be used in your teaching and include a plan for assessing student learning. If you are not currently teaching a course that seems to lend itself to including this material, then describe how you could use this to enrich another course, for example, high school Algebra II, Math Methods, or College Algebra. You may use these examples in your Reflection as well.

The rubric below contains the details about grading, but be sure to notice that a very significant portion of the grade comes from your interpretation and explanation of the graphs, hypothesis tests, confidence intervals, and correlation coefficients. Also note that the rubric allows up to 105 points, so 5 potential bonus points are baked in.

Copy your graphs, etc, into your report so that you only need submit a pdf version of your report, and not the excel file.

Grading Rubric

	Levels of Achievement		
Criteria	**Insufficient**	**Developing**	**Proficient**
Inclusion of Graphs	**0 to 2 points** No or only 1 graph is included.	**3 to 7 points** Only 2 graphs are included.	**8 to 10 points** At least 3 graphs are included.

Interpretation of Graphs	**0 to 4 points** The implications of any graphs are either not mentioned, poorly reasoned, or are incorrect.	**5 to 15 points** The implications of at least 2 graphs are mentioned in the report, but not thoroughly explained.	**16 to 20 points** The implications of each graph is thoroughly discussed in the report. If the graph does not lead to any conclusions, that is explained clearly. If the graphs suggest something about the data, complete details are given. Connections are made to the other parts of the report.
Inclusion of Hypothesis Tests/Confidence Intervals	**0 to 2 points** No or only 1 hypothesis test or confidence interval is included.	**3 to 7 points** Only 2 hypothesis tests or confidence intervals are included.	**8 to 10 points** At least 3 hypothesis tests or confidence intervals are included.
Interpretation of Hypothesis Tests / Confidence Intervals	**0 to 4 points** The implications of any hypothesis tests / confidence intervals are either not mentioned, poorly reasoned, or are incorrect.	**5 to 15 points** The implications of at least 2 hypothesis tests / confidence intervals are mentioned in the report, but not thoroughly explained.	**16 to 20 points** The implications of each hypothesis tests / confidence intervals is thoroughly discussed in the report. If the any do not lead to statistically significant conclusions, that is explained clearly. If they suggest anything statistically significant about the data, complete details are given. Connections are made to the other parts of the report.

Inclusion of Correlation Coefficients	**0 to 2 points** No or only 1 correlation coefficient is included.	**3 to 7 points** At least 2 correlation coefficients are included.	**8 to 10 points** At least 3 correlation coefficients are included.
Interpretation of Correlation Coefficients	**0 to 4 points** The implications of any correlation coefficients are either not mentioned, poorly reasoned, or are incorrect.	**5 to 15 points** The implications of at least 2 correlation coefficients are mentioned in the report, but not thoroughly explained.	**16 to 20 points** The implications of each correlation coefficient is thoroughly discussed in the report. If the any do not lead to any conclusions, that is explained clearly. If the they suggest something about the data, complete details are given. Connections are made to the other parts of the report.
Grammar, Spelling, and Style	**0 to 2 points** The report is poorly written or contains significant grammar or spelling mistakes.	**3 to 7 points** The writing needs improvement or there are some minor grammar or spelling mistakes.	**8 to 10 points** The report is well-written with no significant grammar or spelling mistakes.
Application to Teaching and Assessment Plan	**0 to 1 points** No examples of how statistics could be incorporated into your own teaching are included.	**1 to 2 points** Only 1 example of how statistics could be incorporated into your own teaching is included, or the assessment plan is weak.	**3 to 5 points** At least 2 examples of how statistics could be incorporated into your own teaching are included, and the assessment plan is well thought out.