Math Modeling Project Rubric

_____ (5) The solution to the project is a typed report, single spaced, 12pt font.

_____ (10) The final report has been proof read by every member of the group. You are handing in work that you are proud of and is of professional quality! There are no grammar or spelling errors in the paper.

_____ (total 25) The final report has the following sections and they contain appropriate information.

▪ (3) Introduction – This includes a clear statement of the problem being solved and a short background about the problem. Why is this problem important? Has anyone else ever tried to solve the problem? How will solving the problem change the world?

▪ (5) Formulation – This should include a description of your model, a discussion of all of your assumptions and definitions for any variables or jargon that you are using. I should see your mathematical equations here. Another scientist, or student in this class, should be able to plug his/her measurements into your equations and test your results. How did you come up with the current model? Why do the equations make sense? If I tried to recreate your calculations what would I need to do? Do your assumptions make sense?

▪ (10) Results – This is where you describe your parameter analysis and any validity testing that you did. What did you find by USING your model. What did you learn from your model? Did you test the validity of your model and if so how? Were any of the parameters sensitive? Show graphs that demonstrate how changing your parameters changes the model results. Make sure to describe what you see in the graphs that makes them interesting.

▪ (5) Discussion – This is a discussion about what you found. What do the results as a whole tell you? How might you might change your model if you had all the time and money in the world? Are there other possible models that might work better or worse than yours? Were there any BIG assumptions made that should maybe be reassessed in future work?

▪ (2) Conclusion – This is a very short review of what you did in the paper. A reader should be able to read just your introduction and your conclusion and get the basic idea of what your results were and why they matter.

_____ (10) The mathematics is clearly stated in words along with equations so that another math student can understand it. Please EXPLAIN the equations. What do they mean in terms of the system being modeled.

_____ (10) The mathematics is correct. You triple checked all your units and calculations. Every variable was defined and units were given for each.

_____ (10) All helpful information (graphs, data, computer programs, etc) has been included. It is also fine to put information in an appendix, especially if it is a large data set, but make sure to tell me what it is, your reader should not have to guess. All graphs, equations, and tables appear correctly in the paper. All tables and graphs are clearly labeled and referenced in your writing. It is ok to leave space and carefully write in the equations.

_____ (10) You worked well with your group and contributed to each part of the process.

_____ (20) The “it” factor! You have gone above and beyond the call of duty. You have gone beyond just saying what you think I want to hear. You added something unique to the model or used the model in a unique way. In the paper, you bring together multiple ideas from class and explain how they all fit to form a great model and give great results. Remember you are practicing at being the expert. This means coming to some conclusions and using your model to make your point. This does not mean agreeing with your professors conclusions, or anyone else's for that matter. Make sure your model results support your conclusions.

_____ (priceless) There is at least one joke so your awesome professor doesn't get bored reading it.

TOTAL: 100 points