Introduction to Mathematical Modeling

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Final Project Paper Checklist

Your final papers are graded out of 100 points. Please read the following information carefully and only check off a box when you are sure the project has achieved those goals. Remember you final projects should use ideas that you learned over the course of the semester and be sufficiently in depth or complicated.

- ☐ The solution to the project is a typed report, single spaced, 12pt font. **The project is not more than 6 pages** and you have condensed into it only the most important information. (5 points)
- ☐ The paper is a professional report. This includes careful proof reading, precise explanations, and clear reporting of your findings. (10 points)
- ☐ The final report has the following sections, generally in this order, and they contain appropriate information. (30 points)
  - ☐ **Introduction** – This includes a clear statement of the problem being solved and a short background about the problem.
  - ☐ **Formulation** I should see your general mathematical equations here along with a clear list of important assumptions and definitions for each of your variables.
  - ☐ **Results** – Describe each of your important results in a clear and straightforward way. Make sure to describe what you see in the graphs or tables that makes them interesting. All graphs and tables should be referenced and discussed in the text. Sensitivity results usually go here.
  - ☐ **Discussion** – This is a discussion about what you found. What do the results as a whole tell you? You should also discuss the strengths and weaknesses of your model. Which parameters were most sensitive? What management suggestions might you make?
  - ☐ **Conclusion** – This is a very short review of what you found in the paper.
- ☐ The **mathematics is clearly stated in words and correct** Please EXPLAIN the equations. What do they mean in terms of the system being modeled. (15 points)
- ☐ All helpful information (graphs, data, computer programs, etc) has been included. (10 points)
- ☐ You independently used ideas learned during the semester and expanded or combined them to create a mathematical model. (10 points)
- ☐ The "it" factor! You have convinced the reader that you are modeling an important and useful problem. You have extended ideas from class in an interesting way. Your results are clearly stated and show a thoughtful analysis of your problem. You approach the analysis from a variety of different, and appropriate, ways (ex. Fixed Points, stability, sensitivity, simulations, eigenvalues, eigenvectors, etc). You show a mastery of understanding in applying the tools learned in class by deeply and clearly explaining your modeling and analysis process. (20 points)

FINAL PROJECTS DUE: _____

Don't forget to sing up for and attend your final project meeting!