

Project Report Format

(Based on the steps for Construction of Models found in *A First Course in Mathematical Modeling*.)

Scenario and/or Introduction

Develop the situation which gives rise to the problem you are studying. Put the problem in context. You may use actual situations, current news, or a fictional story – be creative! It is also important to identify your *perspective* with respect to the problem. In some project assignments, the scenario may be given and well developed. In that case, you will want to start your report with more of an introduction which may include a brief synopsis of the scenario, highlights of your model and/or process, and perhaps brief statements about the conclusions.

Problem Identification

Clearly state the problem you are studying in one or two sentences. Also include an indication of how you will determine if/when it has been solved. You may choose to include a few clarifying statements.

Assumptions

Identify underlying assumptions you have made in beginning to look at this problem. Continue by *identifying the major factors* of the problem and connect them to *variables* you are considering. You may need to justify neglecting some factors/variables or explain how they are going to be addressed. Finally, *describe the interrelationships* among these variables.

Problem Study and Solution

Present your mathematical work in studying and solving the problem. Some of the mathematical techniques for addressing the problems that you will be learning in this class include formatting mathematical expressions/equations, sketching graphs, fitting curves to a set of data points, using the computer to do simulations, etc. You will find that this section may include calculations, graphs, diagrams, and tables.

Model Interpretation

Apply your results to the original problem situation. How does your problem address the situation? How sensitive is your solution to your assumptions? Are the assumptions realistic? What are the strengths and/or weaknesses of your model?

Conclusions

Clearly state the conclusions of your study. What did you learn about this problem from your model? What are the implications of your model and/or solution? How could you test your solution? What modifications might be necessary to implement and maintain this solution in the context of the original problem?

Project Grading

The above format is a general guideline. You may find that some of the sections have a tendency to overlap or more descriptive sections/subsections would seem appropriate. I do not require that you have each section specifically labeled as such -- but all of the appropriate pieces should be there. You should always have some form of introduction/scenario and conclusion clearly labeled and "natural" section breaks in between. If you include any pictures, computer output, etc., make sure that they are clearly labeled and referred to in the text of your report. Ideally, they should be included within the text, but in some cases this may be difficult and they can be included at the end of the report -- clearly labeled. The first two projects will probably be only 1-2 pages. Projects later in the course will become more involved and will probably be 3-5 pages in length.

The grading criterion will be broken down as follows:

Correctness 70%

Correct mathematical development of the problem solution: appropriate use of mathematical techniques and strategies, correct and reasonable results [answered the question(s) posed], completeness of solution and explanation, etc.

Synthesis and Integration 10%

Evidence that you have given deep thought to the problem: synthesis of sources and ideas, use of sources beyond the textbook [referenced appropriately], use of imagination in developing the scenario, cleverness of solution, etc.

Mechanics 10%

Clear and easy to read: Clearly and skillfully organized and written, error-free, etc.

Format 10%

First Impressions: use of standard conventions, professional presentation, word-processed, neat, etc.

Group Projects

Once a group project has been graded, each group member will obtain a percentage of those points based on self- and peer-evaluations. Below is a sample of the evaluation question. The average of all group member responses will be used to determine the effect on each individual grade for the project. See the sample evaluation question below and grading effects. These rankings will also be used in determining the participation grade as outlined in the syllabus.

Please rank yourself and each member in your group on the level to which you/he/she contributed to the project.

Name (include yourself)	Problem		Unsatisfactory		Satisfactory					
	See Dr. Crawford		20% Deduction		10% Deduction			No Deduction		
	1	2	3	4	5	6	7	8	9	10