

Final Projects

The following is a guideline for your final project, if you choose to do one instead of taking the final. The projects should be at least 4-5 pages of written material (not including graphs) *per person*, and can be done in groups.

1. Introduction (about one page)
You should describe the equations/theorems/algorithms that you are studying in detail. If the model comes from an application in the sciences, you should include it's derivation from basic principles. In all cases, you should discuss the significance of your study.
2. Calculations (about 2 pages)
You should analyze your equations/theorems/algorithms using all relevant techniques presented in class.
3. Computations
If applicable, you should perform numerical experiments to verify your analysis.
4. Discussion (1 page)
You should summarize your results and discuss future directions for your project.
5. Bibliography
You should have a bibliography with at least five references.

You should submit an outline **no later than one week after the second midterm**. If you need suggestions, I will place the textbook "Differential Equations" by Blanchard, Devaney, and Hall on reserve in the Math/Physics library, as it contains many potential projects. Other possibilities include material from the text that won't be covered in class (e.g. quantitative behavior of periodic orbits, fractals, or strange attractors), or more in depth analysis of topics covered in class.