

Math 1360 : Fall 2011

Preliminary Report Checklist

REQUIRED

- The title and authors of the project are stated.
- Background to the problem is given which identifies the system to be studied, the circumstances under which the system is studied, major influences on its behavior, observations that have been made or can be made to help identify the model.
- The model type (discrete or ODE) is selected and justified.
- Dependent and independent variables of the model are explained and their units are given. Admissible and expected ranges of the variables are given.
- Equations of the model are written together with initial conditions.
- Each term in the equations is explained and justified, together with the corresponding parameters. Estimates of admissible ranges for the parameters are given, supported by reasoning.
- References to information sources are given

OPTIONAL

- Analytical solution of the system is given.
- Fitting of the data is described with pictures showing the best fit and values of the estimated parameters. At least 3 different initial guesses have been tried and the outcomes discussed (the same or different best fits)?
- Reduction of the model to 2 dimensions is performed and phase portrait analysis of the model is given with nullcline description and their dependence on parameters, equilibrium/fixed point description and their dependence on parameters. Long term behavior of the model is discussed