

DEPARTMENT OF MATHEMATICS, NORTHEASTERN UNIVERSITY

MTH G131: Introduction to mathematical methods and modeling.

Guidelines for course project

The project is intended to provide a way to use the mathematical methods developed in the course to set up and analyze a model of some phenomenon. You may work singly or in pairs on the project. The initial plan and design of the project should be made in consultation with me, and throughout the project you should consult me and keep me up to date on progress.

The project should have the following features:

- a) It should be built around a phenomenon of interest to you. The phenomenon can arise in any area of interest, eg physics, chemistry, biology, finance, computer systems etc.. I will provide some suggestions for projects, and you are welcome to suggest ones yourself.
- b) The phenomenon should be represented by a mathematical model, and you should be able to justify the features of this model. Since most of this course is concerned with differential equations, it would be best to have a model that uses differential equations; however this is not essential.
- c) Your solution should include an analytical component and a numerical component (don't worry if your programming skills are rusty, we can find a way around it).
- d) You should plan to make a brief presentation of your project to the class at the end of the course.