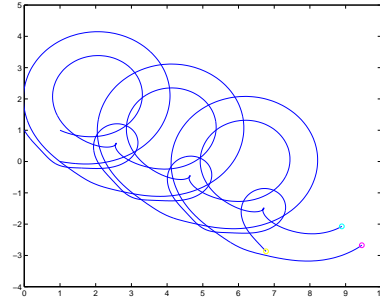


# Course in Winter 2002

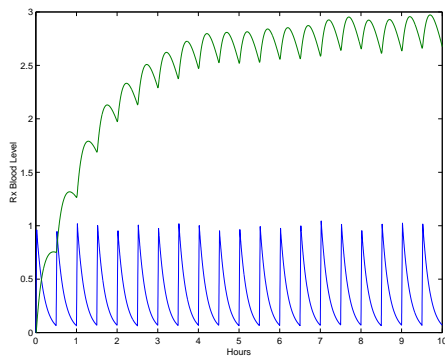
## ES\_APPM 346:

# Numerical Methods for Differential Equations

Differential equations play a role in models found in every engineering discipline. Often, these equations are non-linear and difficult or impossible to solve analytically. To understand the behavior of these models, and to use them in practical applications, we turn to numerical approximations. In this course, we will study the design and implementation of numerical methods for solving different types of differential equations from an application oriented perspective.



Fluid Motion of Discrete Vortices



Drug Dosage

Partial list of topics include numerical methods for:

- Ordinary differential equations
- Stiff differential equations
- Differential algebraic equations
- Two-point boundary value problems
- Partial differential equations
- Stochastic differential equations

The course will be project based with several computing projects.

Prerequisite: Basic programming skills in Matlab or other programming language, and EA-4 or equivalent.

Instructor: David Chopp, [chopp@northwestern.edu](mailto:chopp@northwestern.edu), Tech M448, 1-8391