Reminder:

Exam 1 is scheduled for Monday September 25 from 6:30 to 9:30 in Fowler 302. More information can be found on the web: http://www.ron.oxy.edu/math/110/00/

Preparing for Class 10

Reading: Review *CiC Handouts* Section 1.1

Problems: *CiC Handouts* Section 1.1, #18, #8-14.

Homework Due: All problems assigned as preparation for Classes 8, 9 and 10 are due.

Gateways: If you have not yet passed the first Gateway, you should make plans to attend the Gateway workshops for tutoring and retesting ASAP. This is not an optional part of the course!

Monday, September 18

Class 10:

Qualitative Analysis of the S-I-R Model

In last week's lab you varied the values of different parameters in the revised cooling model and noticed that this changed the behavior of the solutions. The S-I-R model of a measles epidemic also has parameters. In today's class you will learn how to analyze the model to better understand the role these parameters play in determining the solution. This will turn out to lead to valuable insights concerning the control of epidemics.

Preparing for Class 11

Reading: Review *CiC Handouts* Section 1.1

Problems: *CiC Handouts* Section 1.1, #20, 21, 22

Wednesday, September 20

Class 11:

Introduction to Successive Approximation

   You will already have noticed that the piecewise linear approximations produced by Euler's Method get better if you take smaller and smaller stepsizes. In today's class you will learn about the advantage of repeating Euler's Method with a succession of smaller and smaller stepsizes rather than simply running it once with a small stepsize.

   Take-Home Quiz on Modelling Handed Out.

Lab 4: Euler's Method and Successive Approximation

Preparing for Class 12

   Reading: Review *H-H*, Section 10.3.

   Problems: *CiC Handouts* Section 1.1, #23-28, *H-H*, Section 10.3, #7, 8.
                     (*Note:* The answer to 7c) is $x^2 + 1$.)

Friday, September 24

Class 12:

Review of Unit 1

   This first unit of our course has had two themes: modeling with rate equations and direct proportionality, and constructing piecewise linear functions using an initial value and a sequence of slopes. These come together in Euler's Method, where the slope information is provided by a rate equation, and the piecewise linear function you create is interpreted as an approximation to a solution of the rate equation. Today's class will pull all this together.

   Take-Home Quiz on Modelling Due at the Start of Class.