Differential Equations

Math 341 Fall 2008 Fowler 307 MWF 2:30pm - 3:25pm

 http://faculty.oxy.edu/ron/math/341/08/

Week 3

Monday September 8 : *Class 5*:

Existence and Uniqueness Theorem. We will investigate the conditions which guarantee existence and/or uniqueness of solutions to the initial value problem $y' = f(t, y), \quad y(t_0) = y_0$.

Reading:

Blanchard, 1.5

Reading Quiz #1 on §1.1-1.4

Homework #5:

Blanchard, Section 1.5: 2, 3, 12, 14, 15.

Quiz #1 DUE

Wednesday September 10 : *Class 6*:

Phase Lines and Classification of Equilibria. We will continue our qualitative analysis of differential equations by learning how to use **phase lines** and the classification of equilibrium points.

Reading:

Blanchard, Section 1.6

Homework #6:

Blanchard, Section 1.6: 2, 7, 8, 19, 20, 30, 31, 41.

Friday September 12 *Class 7*:

Bifurcations. We will learn about a modern analytical technique which allows one to analyze differential equations which contain parameters.

Reading:

Blanchard, Section 1.7

Homework #7:

Blanchard, Section 1.7: 3, 6, 8, 12, 15.