Week 4

Monday September 16 : *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.

Wednesday September 18 : *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, 10, 13, 18.

Quiz

(In-Class) Reading Quiz #1 on Sections 1.1-1.4

Friday September 20 : *Class 8*

Linear Differential Equations. We will learn about the Linearity Principle and how it helps us to solve an entire clas of ODEs.

Reading:

Blanchard, Section 1.8

Homework #8:

Blanchard, Section 1.8: 4, 8, 9, 17, 18, 20.