Differential Equations

Week 7

Monday October 7 : *Worksheet 12*

Analytical Methods for Special Systems. We will learn an analytical technique to obtain solutions of specific classes of linear systems (decoupled and partially decoupled).

Reading:

Blanchard, Section 2.2 and 2.4

Homework #12:

Blanchard, Section 2.2: 4, 8, 9, 17, 18, 20, 31*.
Blanchard, Section 2.4: 2, 5, 7, 8.

Wednesday October 9 : *Worksheet 13*

Euler's Method for Systems. It's baaaaaaack! We will look at how to implement the numerical technique Euler's Method when one has a linear system of ODEs and initial conditions $\dfrac{d\vec{x}}{dt} = \vec{F}(\vec{x}), \quad \vec{x}(0) = \vec{x}_0$.

Reading:

Blanchard, Section 2.5

Homework #13:

Blanchard, Section 2.5: 2, 3.

Quiz:

Reading Quiz #2 on Section 1.5-1.9 of Blanchard.

Friday October 11 : *Worksheet 14*

Review for Exam #1. We'll review the material from (most of) the first two chapters of the book.

Reading:

Blanchard, Chapter 1 and 2 (excluding sections 2.6-2.8)