

42031 Mathematical Models and Dynamical Systems (3)

Knowledge

Students will learn to formulate and analyze mathematical models for a variety of phenomena, including optimization, dynamical systems and probability.

Comprehension

Students will gain understanding of key aspect of linear/nonlinear programming, models and solutions population growth, and probability model involving exponential distributions, uniform distributions, and Gaussian distributions.

Application

The students should be able to apply the knowledge from this class to formulate and analyze math models from real life.

Analysis

Students will develop the ability to solve related problem and analyze the solution.

Synthesis

Students should get used to combine their skills from Calculus, Linear Algebra, Introduction to Differential Equations, and Probability to this class.

Evaluation

Students are given in-class exams to test for the understanding of materials. Students will participate course evaluation at the end of semester to critically assessing the effectiveness of the course in meeting their needs, expectations.

Class Activities

To solve problems in class. Learn to utilize computer software MATHEMATICA to obtain and understand the solutions.

Out of class Activities

To submit every week home assignments. To prepare for mid-terms and comprehensive final exam.