Dr. Marc Roussel

Course: Chem 4000
Title: Modeling Biochemical Reaction Networks

Description: This course is an introduction to the modeling of biochemical reactions and reaction networks. Starting from an elementary discussion of biochemical reactions, basic concepts of biochemical modeling will be presented. Ordinary differential equation (ODE) models will be featured in the first part of the course, including a discussion of numerical methods for the solution of ODEs. In the second part of the course, stochastic simulation methods will be studied. Applications may include cellular metabolism, signalling pathways, and genetic regulation. The use of simulation software will be emphasized throughout.

Prerequisites: Chemistry 2740 or Mathematics 3600 or Physics 2800 or Biochemistry 3100