MATH 548 – Mathematical Finance I

Course Description from Bulletin: This is an introductory course in mathematical finance. Technical difficulty of the subject is kept at a minimum by considering a discrete time framework. Nevertheless, the major ideas and concepts underlying modern mathematical finance and financial engineering are explained and illustrated. (3-0-3)

Enrollment: Elective for AM and other majors

Textbook(s):

1. Stanley Pliska, *Introduction to Mathematical Finance: Discrete Time Models,* Blackwell
2. Giuseppe Campolieti, Roman N. Makarov, *Financial Mathematics: A Comprehensive Treatment*, Chapman and Hall/CRC

Other required material: None

Prerequisites: MATH 474 or MATH 475 or equivalent

Objectives:

    c. Return and dividend processes
    d. What all this means for valuation and hedging
    e. Binomial and Markov models
3. Financial derivatives 12
    a. Contingent claims
    b. European and American options
    c. Futures and forward contracts
4. Risk and performance measure
    a. Coherent and convex risk measures
    b. Performance measures
    c.