

Math 454 - Spring 2021 - Homework 12

Published: Friday, April 30, 2021

Update May 3, 2021

Written assignments 1 and 2 have been added.

Status - Reading Assignments:

Here is the status of the reading assignments you were asked to complete by this date plus the material taught in class without assigned reading.

SCF2 (Shreve Textbook):
ch.1-5.5.2

MF454 lecture notes:
ch.2 – 11

Other: • Wiersema (optional - no internet PDF) p.130-135: one period binomial model

New reading assignments:

Reading assignment 1 - due Monday, May 3:

- a. Carefully read the MF454 items already done in lecture: MF ch.12.1–12.5. If I release a new version then you also should read the part of ch.12.6 I covered in lecture. It all is part of what you were already asked to read in SCF2 ch.5.

Reading assignment 2 - due: Tuesday, May 4:

- a. Carefully read the remainder of SCF2 ch..5 and ch.5.6.1 This is the end of the material I am covering from SCF2 ch.5.
- b. Carefully read SCF2 ch.6.1 and ch.6.2 through example 6.1 (GBM), but only skim the two interest rate model examples 6.2 (Hull–White) and 6.3 (Cox–Ingersoll–Ross).

Reading assignment 3 - due: Wednesday, May 5:

- a. Carefully read SCF2 ch.6.3.
- b. Carefully read SCF2 ch.6.4. Even better, read it twice! It contains the general framework for what we saw in the special case of a European call obtaining the solution of a (deterministic) PDE by means of the expected value taken of a random process evaluated at the terminal time T .

Reading assignment 4 - due Friday, May 7:

- a. Carefully read SCF2 ch.6.5 until Example 6.5.1 – Hull–White interest rate model) Skim the examples. We will not talk about them in lecture.
- b. Read SCF2 ch.6.6 just so you remember what it contains but read example 6.6.1 (Asian option) carefully. This concludes the material of interest in SCF2 ch.6.

Written assignments: See next page.

Written assignments:

General note on written assignments: I will not collect those assignments for grading but doing them might be helpful for your quizzes and exams.

Written assignment 1:

Prove Exercise 12.2. in MF454. You will need a version 2021-05-03 or newer of the lecture notes

Written assignment 2:

This item has been removed!