George Mason University
Math 557
Course Syllabus

Term   Spring 2022
Title   Financial Derivatives
Location   Aquia 213
Time   Tuesday evenings 7:20 – 09:55
Professor: Douglas Eckley
                deckley2@gmu.edu
                mobile #   571 277 7927 (use sparingly)
                office #   703 993 1682
                office hours 5 to 7pm on Tue, Wed, and Thu

Description

This course will accomplish two goals, which are, generally speaking;

1) Model the price of a share of stock in a company, OR of a market index
2) Determine the prices of derivative securities (primarily puts and calls)

Toward the end we will spend some time on the modeling of bonds and interest rates, though that is not a prominent feature of the course.

For those who are interested, this course satisfies the coursework requirement relating to the MFE exam in the Society of Actuaries examination sequence.

The book is Derivatives Markets (Third Edition), 2013, by McDonald, R.L., Pearson Education, ISBN: 978-0-32154-308-0

Procedures

The class will consist mostly of a series of lectures.
Grading will be on a 100-point scale divided as follows:

        Progress Exams (3)   60
        Final exam   40

The final will be cumulative.

Calendar

Date	Topic	Reference to Book
25-Jan	Background, Definitions, Terminology	Ch 2
01-Feb	Discrete Time Model	Ch 10
08-Feb	Lognormal Distribution	Ch 18
15-Feb	Continuous Time Model	Ch 20
22-Feb	Progress Exam #1	
01-Mar	Option-related Concepts	Ch 9
08-Mar	Black-Scholes Formula	Ch 12
15-Mar	NO CLASS (spring break)	
22-Mar	Hedging	Ch 13
29-Mar	Progress Exam #2	
05-Apr	Monte Carlo	Ch 19
12-Apr	Volatility	Ch 24
19-Apr	Modeling Interest Rates	Ch 25
	Also semester project due	
26-Apr	Progress Exam #3	
03-May	Review	
10-May	Final Exam	