

George Mason University
Math 557
Course Syllabus

Term Spring 2021
Title Financial Derivatives
Location Blackboard Collaborate Ultra
Time Tuesday evenings 7:20 – 09:45
Professor: Douglas Eckley
 deckley2@gmu.edu
 mobile # 571 277 7927 (use sparingly)
 office # N/A because of Covid
 office hours with appointment, via Skype or Zoom

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

<u>Date</u>	<u>Topic</u>	<u>Reference to Book</u>
26-Jan	Background, Definitions, Terminology	Ch 2
02-Feb	Discrete Time Model	Ch 10
09-Feb	Lognormal Distribution	Ch 18
16-Feb	Continuous Time Model	Ch 20
23-Feb	Progress Exam #1	
02-Mar	Option-related Concepts	Ch 9
09-Mar	Black-Scholes Formula	Ch 12
16-Mar	Hedging	Ch 13
23-Mar	Progress Exam #2	
30-Mar	Monte Carlo	Ch 19
06-Apr	Volatility	Ch 24
13-Apr	Modeling Interest Rates	Ch 25
20-Apr	Progress Exam #3	
27-Apr	Review	
04-May	Final Exam	