

Course Syllabus

CFRM 504: Options & Derivatives

Autumn 2020

General Info: **Lecture Time:** MW 9:30-10:45 (different from time posted on UW website)
Location: Online
Web Site: <https://canvas.uw.edu> (Navigate to CFRM 504)

Instructor: **Matt Lorig**
E-mail: mlorig@uw.edu

Teach. Asst.: **Cha Suaysom**
E-mail: nsuaysom@uw.edu
Office Hours: See course website for times and locations

Course Prerequisites

It is HIGHLY recommended that you have taken courses in multivariate calculus, probability, and statistics.

Course Description

This is an introductory course on derivatives markets and option pricing.

Textbooks

My course notes will serve as the primary text for this course. And up-to-date version of the notes will be posted on the course website.

Rough outline of the course

- Introduction and Review of Probability
- Introduction to Derivatives, Forward contracts and Options
- Binomial model
- Fundamental Theorems of Asset pricing and incomplete markets
- Introduction to Stochastic processes and modeling stocks in continuous time
- Black-Scholes 101
- Greeks
- Variance contracts and Exotic Options
- Dupire's Local Volatility
- Stochastic Volatility

Grading

Numerical course grades will be based on the following components:

- Homework 70%
- Final Exam 30%

Your final grade will depend on how well you do relative to other students in this and previous courses – not your absolute score (i.e., I will use a grading curve). You may work together on homework. You must work along on the final exam. The final exam will be similar in style to homework problems. But, it will cover material from the entire course. Like homework sets, you will have at least a week to complete the final exam.

Expectations, late homework, re-grades and missing exams

Expectations: To receive full credit on a homework or exam problem, you must (i) have the correct and complete answer in the specified form (ii) clearly show all of the work necessary to arrive at your answer. A complete answer generally will make use of all of the information given in the problem. For example, if the answer involves taking an expectation, and you can evaluate the expectation explicitly, you should do so. When in doubt, imagine that you are an employee at a company, that your boss has asked you to answer a question and that your answer will determine your end-of-the-year bonus. If another employee (i.e., student) provides a more complete answer than you, this employee will get a higher bonus (i.e., grade).

Late Homework policy: I make sure to always cover the material needed to complete a HW set before I assign it. And I always give you at least one full week to complete the assignments. As such, *late homework will not be accepted under any circumstances*. Please do not send me or the TA e-mails asking for additional HW extensions. If you have a true medical or family emergency (e.g., death in the family), then contact the CFRM Graduate Program Adviser, Laurie Feldman (lf23@uw.edu). She will talk with me and your other professors.

Re-grades: If you ask the TA or me to re-grade your homework we will take off additional points unless we find that there has been a grading error. Additionally, if we find further mistakes on your homework, we may take off points for this as well. Thus, you should only ask for a re-grade if you are 100% certain that your answer is correct and that they have shown sufficient work to receive full credit.

Missing the final: If you miss the final exam you will fail the course unless you have a true medical or family emergency. In this case, you should contact the CFRM Graduate Program Adviser, Laurie Feldman (lf23@uw.edu). She will talk with me and your other professors. You will receive an incomplete until you have taken a make-up final. Generally, the make-up final will be *more difficult* than the regular final, due to the increased time available for studying.

Homework Questions

If you have a question about the homework, **please do not email me or teaching assistant with your question. Rather, please post your question on the Canvas website under the “Discussions” tab** and either I, the TA or another student will respond.

If you see a question posted on the discussion forum and you know the answer, please respond. At the end of the quarter, **I will raise the final grade of any student who has made a strong effort to answer questions posted on Canvas.**

Students with Disabilities

In compliance with University of Washington policy and equal access laws, I am available to discuss appropriate academic accommodations that you may require as a student with a disability. Request for academic accommodations need to be made during the first week of the quarter, except for unusual circumstances, so arrangements can be made. Students are encouraged to register with the Disability

Services Office for disability verification and for determination of reasonable academic accommodations.

For more information, visit: <http://www.washington.edu/admin/dso/>

Religious Accommodations

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at

<https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/>.

Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form available at:

<https://registrar.washington.edu/students/religious-accommodations-request/>.