

MW 11:45 – 1:00

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Office Hours: Tuesdays 2pm – 4pm &amp; Thursdays 10am – 12pm or by appointment

**SYLLABUS****COURSE SYNOPSIS**

The goal of this course is to provide a framework for understanding the key theoretical and practical models used in the financial world. After introducing some basic pricing and valuation tools, we will address how to use these tools to provide a foundation on how financial assets are priced in the marketplace. We will go on to examine the tradeoffs between risk and return, and explore optimal portfolio selection and analysis. We will also discuss some derivatives markets (futures and options) and evaluate how these securities can be used for both hedging and speculative purposes. Finally we will introduce corporate valuation using net present value and alternative methodologies for pricing both projects and companies.

**CLASS MEETING TIMES AND FORMAT**

Classes will be in a lecture format, but I encourage students to ask questions and to challenge ideas and concepts that are introduced. I will hold weekly office hours, and will also be available at other times by appointment.

Class attendance is *essential*, as much of the material that we will cover is not in the (optional) textbook, and the lecture handouts by themselves are not sufficient to understand the material fully. Repeated absence from class is likely to have a negative impact on your grade, as I will count *anything* that I say in class to be fair game for questions in problem sets and exams.

**TEXTS:**

Lecture Notes: Will be posted on Sakai.

*Many students find class attendance and the posted lecture notes to be sufficient. However, if you prefer to have other texts relating to the material, the following two books may be helpful:*

Brealey and Myers: *Principles of Corporate Finance* OPTIONAL

Bodie, Kane and Marcus: *Investments* OPTIONAL

**ASSIGNMENTS, PROJECTS, EXAM AND GRADING:**

Your grade for this course will be based on a combination of 8 problem sets (of which each individual student's best 6 scores will count for 24%), a case study (6%), a midterm exam (25%), and a final exam (45%).

### Problem Sets

The problem sets will be posted on Sakai, typically on a Wednesday, to be handed in (physical copies) the following Monday at the beginning of class. Problem sets may not be handed in late under *any* circumstances. I understand that there may be exceptional circumstances relating to illness, family emergency, etc. that may prevent you from being able to submit every problem set on time. For this reason, I will drop the lowest two problem set scores for each student before calculating final grades for the class.

I will permit If you work in teams of up to 4 people on the problem sets. You may work with the same team throughout the semester, or change teams for different problem sets, or work alone – whichever you prefer. For each submitted problem set, all team members' names and NetIDs must be *written clearly, at the top of the problem set. If there are any names or NetIDs that do not match the students' names and NetIDs on Sakai, those students' grades will not be recorded.*

If you do choose to work in a team, bear in mind that the midterm and final exams are based on independent performance, which should temper your desire to 'free-ride' on problem sets. If you don't fully understand how to do the problems in the problem sets, you will not do well in the exams.

Be aware that *accuracy* is an important component of the grade received on all problem sets and the exams. In other classes, you might lose just one mark if you use the right method but make a numerical error and arrive at the wrong solution. You should not assume that this type of grading policy will apply in *this* course. Clear and lucid presentation of your solutions will also work in your favor.

The case study and some problem sets will necessitate the use of the spreadsheet software Excel. If you are unfamiliar with Excel, this will be an excellent opportunity to get some experience with it. It is used throughout the business world, and especially in finance/economics/accounting-related fields.

### Case Study

There will be one Case Study, based on a General Motors (GM) business problem. You may work on this in teams of up to 4 students (or you may work on it alone if you prefer). Please note that the case study *cannot* count as a dropped problem set grade (see notes on dropped problem set grades above). The case study will be due on Monday, February 26, and we will have a visiting lecture from GM in class that day for a debrief. (Good in-class questions during this visiting lecture will earn small extra credit.)

### Final Exam

The final exam for the course is cumulative, and will take place on Wednesday, May 2 from 2pm – 5pm in our usual classroom, as scheduled on the University exam calendar:

<https://registrar.duke.edu/registration/exam-schedule-spring-2018>

### **REGRADE POLICY**

I will only accept requests to regrade a problem set if (1) you submit it within 7 days of the problem set being graded and returned, and (2) you believe that your true grade is more than 4% higher than your written grade on that problem set. That is, I actively discourage "grade grubbing". You should also be aware that if you submit a problem set for a regrade, I will regrade the entire problem set, and that this has potential to result in a reduction of the homework grade, if I think that the grader has been too generous in any of the marks awarded.

The same regrade policy applies to the exam: only submit an exam for a regrade if you believe that there is a grading error (I'll permit requests to check errors of 2% or more for exams); and assume that I'll regrade the entire exam.

**COURSE SCHEDULE****Introduction to Discounting**

Rates of return. Future Value and present value. Present value of multiple cashflows.

**Bond Markets**

Bond prices and yields. Forward rates. Duration, convexity, and hedging. The term structure of interest rates and theories of the yield curve slope. Risk management in the fixed income markets.

*Problem Sets 1 & 2 (Due Jan 29, Feb 5)*

**Equity Securities and Corporate Valuation**

Net present value and its use in valuing corporate projects. Alternatives to NPV. Valuation via multiples analysis.

*Problem Set 3 (Due Feb 12)*

**Portfolio Theory**

Review of essential microeconomic concepts: utility and risk aversion. Potential violations of “standard” economic preference models. Review of essential statistics: random variables, and measurement of the first and second moments. Correlation, covariance, and variance-covariance matrices. Properties of the normal and lognormal distributions. Portfolio risk-return tradeoff. Reducing risk through diversification. The Efficient Frontier and minimum variance portfolios. Asset allocation and the Capital Allocation Line. Optimal portfolios and the Capital Market Line.

*Problem set 4 (due Feb 19)*

*General Motors Case Study in self-selected teams of 3 – 4 students  
(due Feb 26)*

**GENERAL MOTORS VISITING LECTURE: CASE STUDY**

Feb 26: A visitor from General Motors presents the General Motors Case Study debrief.

**Midterm Exam**

Exam review: Monday, March 5 in class

Midterm: Wednesday, March 7 in class

**Spring Break**

March 12 – March 16

**Capital Asset Pricing Model: CAPM**

Review of regression analysis. Capital Asset Pricing Model: derivation using “marginal price of risk” arguments. Systematic versus idiosyncratic risk. The Security Market Line and its relationship to the CML. Mispricing and Jensen’s alpha.

*Problem Set 5 (due March 26)*

**Performance Measurement**

Portfolio management. Performance measurement using benchmarks. Caveats to performance measurement. Luck vs skill. Hedge fund and mutual fund performance.

*Problem Set 6 (due April 2)*

**Derivatives**

Futures Markets and futures pricing. Stock, currency and commodities futures and derivation of no-arbitrage pricing formulas. Using futures for speculation and hedging purposes. Introduction to Options and option payoffs. Combination trades for hedging and speculation. Put-call parity and no-arbitrage pricing.

*Problem Sets 7 & 8 (April 9, April 16)*

**Review and wrap-up**

April 23, 25

**Final Exam**

Wednesday, May 2, from 2pm – 5pm in Soc Sci 139