

Corporate Finance
Finance 100
The Wharton School, University of Pennsylvania
Spring 2019

Course Description

Finance 100 presents the basic tools of finance and forms the foundation for all elective finance courses. The class will teach you how to account for the value of cash flows in the present and in the future, how to account for the riskiness of cash flows, and how to make decisions using these tools in the real world.

I will cover examples both from personal finance (Should I get a mortgage? How much should I save for retirement?) and that you may see in the work place (How much is a company worth? What projects should my firm invest ?).

The main topics covered include (1) the time value of money and the net present value rule; (2) capital budgeting decisions; (3) valuation of bonds and stocks; (4) uncertainty and the tradeoff between risk and return; (5) corporate financing decisions; and (6) options and derivatives.

Required Background/ Note on Mathematical Level of Course

The course requires you to have taken 1. a class in calculus and 2. a class in economics and either have taken or be taking 3. a class in statistics and 4. a class in accounting. All accounting I use in the class will be entirely self contained, but the mathematical background I have to be stricter about enforcing for students who want to take the class.

Any student who does not meet all the official prerequisites must demonstrate that they are comfortable with the following mathematical skills. 1. Minimizing a quadratic function of multiple variables by taking first order conditions using partial derivatives. 2. Solving systems of linear equations. 3. Some familiarity with basic concepts in probability such as mean, variance, covariance, the law of large numbers, and linear regression. These three topics I will use regularly in the class, though I will be careful not to use any math beyond this.

NOTE: There are other sections of this course that I believe will be less mathematically intensive than mine. If you are not interested in learning how to use multivariable calculus to solve for mean-variance optimal portfolio choices in detail, please look into other sections of the class. While finance 100 is a required course, taking my sections in particular is not.

There is no need to be a Wharton student to sign up for my class (at least subject to the caps on section size). I am more than happy to teach anyone who has the technical background to follow the class.

Professor

William Diamond

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Teaching Assistants

Irene Gendelman

Elaine Li

Elina Ma

James Xue

I am very lucky to have this group of teaching assistants. I selected them based both on their understanding of the subject matter and their ability to communicate clearly and interact with their peers. It so happened to be the case that the top four final grades in my class also happened to be students who I thought had the potential to be great teaching assistants. They are an excellent resource for learning the material in this class!!

Course Material

- Required: Course notes/slides, links to relevant articles, and practice exam questions available on Canvas: <https://canvas.upenn.edu>.
- Strongly Recommended: Corporate Finance: The Core by Berk and DeMarzo (old editions of this book are fine)
- A scientific or business calculator. It will be necessary for your calculator to have a x^y function. Some problem sets (and possibly parts of some exams) will require use of excel or some other simple statistical software.

Problem Sets

Problem sets are due on the day given in the syllabus. You will be rewarded full credit on the problem set if you have made a good-faith effort to answer all of the questions, and if you hand in the problem set on time. Late problem sets will not be accepted.

Grading

Grades will be based on the midterm exams (25% for your highest midterm score, 20% for your lowest midterm score), the problem sets (10%), participation/attendance/etiquette (10%), and the final exam (35%). The second midterm will integrate material from before the first midterm. The final exam, which is held on the date and time determined by the registrar, will be fully cumulative.

The participation/attendance/etiquette grade will be based on showing up to class regularly, being an active participant in the course, and being professional in your interactions with the teaching assistants and myself. I welcome questions during lecture, though there is no need to ask "fake" questions or to ask questions if you feel uncomfortable doing so in order to get a perfect participation grade. As long as you show up to lecture, do all the work, and provide some evidence of using the courses resources to learn in whatever way is most useful for you, you are likely to get a perfect participation grade. The "etiquette" portion of this grade I have introduced as a disincentive for students to aggressively ask for some sort of special treatment (or to no show to student/faculty meals or other appointments with me or the teaching assistants). In my experience the vast majority of students have been a pleasure to teach and only in extreme cases will this etiquette grade matter. I also may cold call students or ask students to come solve a problem with me on the board from time to time. I will also request that students pick a seat at the beginning of the semester and sit in the same spot so that I can take attendance in the least disruptive manner possible. You are allowed three absences with no questions asked before your attendance grade suffers.

You will be allowed one double-sided page of notes for the first midterm, two double-sided pages for the second, and three double-sided pages for the final.

Your lowest midterm grade will be replaced by your score on the final if that increases your performance. However, this option to replace a

midterm grade only applies if you show up to all midterm exams and either give some answer to all questions or spend the entire exam period working on the exam.

The grade distribution in the class I will try to make similar to numbers I have seen on the average GPA in a Wharton course, with the possibility of higher grades if the class performs very well. Because I may adjust the curve upwards, there is no sense in which one student is "competing against" another in a zero sum way given how I compute grades.

In order to allow for differences in the average score in exams, my option to drop a midterm score will be computed using your ranking on the test and not numerical scores. For example if you score 70th percentile on midterm 1, 60th percentile on midterm 2, and 65th percentile on the final, I will compute your grade as if you got whatever numerical score was 65th percentile on midterm 2.

Exam Schedule:

- First Midterm: February 25, in class.
- Second Midterm: April 1, in class.
- Final: TBD

All regrade requests must be made in writing within one week of the day the exams are returned. Any exam submitted for regrading of a question can be subjected to a complete regrading. Your score may go up or down as a result of the regrade. I will put a regrade form on the class website that I will ask you to fill out in order to request a regrade.

Exam Absences:

There will not be any make-up exams except as required by university policy. There are some situations in which a student is entitled to a make-up final exam, in which case it will be given at the beginning of the next semester. Make up midterm exams have fewer explicit regulations and are unlikely to occur under any circumstance. If there is an extreme situation in which by my discretion I think a student is being disadvantaged through no fault of their own by missing a midterm exam, I may offer to reweight the way their grades are computed to put more emphasis on other exams. However, this is a policy that I will propose only when I think it is appropriate (so requesting it will not increase your odds of this).

Study Groups

You are encouraged to work in groups on the problem sets, but you must hand in your own answers. It is also highly recommended that you regularly review the readings and class notes with your study group.

Office Hours

I will hold my office hours in the evening once a week after the last section of my classes on Mondays and Wednesdays. I will start by holding them on Mondays but am happy to switch between these two slots from time to time to allow more students to show up. The teaching assistants will also hold office hours (times TBD).

Teaching Assistant office hours will be held in the TA cubicles (SHDH 2305). Times will be announced by the beginning of the second week of classes. All office hours begin the second week of classes. Changes to office hour times and locations in any given week will be posted on Canvas.

Faculty Meals

Wharton is kind enough to fund meals for students and faculty. I will have a sign up sheet on and many slots for you to have a meal with me in groups of 3 to 7 students. This is entirely optional, but I hope it is a fun way for us to get to know each other. Last time I taught this course, I took students out to dinner at various restaurants around town and plan to do so again this year. So this course may have the "best food" of any you take. :) However, I had an issue with no shows, so I have decided that cancelling for a dinner less than 48 hours ahead of time will be reflected in a lower participation grade except under the sort of circumstances that would allow for a make up exam.

Electronics

I have decided to ban electronics during lectures to encourage everyone to pay attention and participate. If you need to use a computer and have an accommodation from the disabilities office in order to do so, that is totally fine.

Honor Code

Students are expected to respect the University of Pennsylvania's Code of Academic Integrity

(http://www.upenn.edu/academicintegrity/ai_codeofacademicintegrity.html)

and to behave with integrity in all aspects of the course. Students are forbidden to discuss exams during the period between sections to avoid giving later sections an unfair advantage. Violations of the honor code will be immediately reported to the administration.

Course Schedule

Chapter denotes textbook readings. Please see the Files section of Canvas for additional material. Dates are approximate.

Date	Topic	Chapter	Assignment
16-Jan	Intro, Time value of money 1	Chapters 3,4	
21-Jan	MLK day		
23-Jan	Time value of money 2, NPV and other investment rules 1	Chapters 3,4	
28-Jan	Practical Applications/ Problem Solving Day 1		
30-Jan	Interest Rates and Bonds 1	Chapters 5,6	PS 1 due
4-Feb	Interest Rates and Bonds 2	Chapters 5,6	
6-Feb	Practical Applications/ Problem Solving Day 2		
11-Feb	Investment Decisions and Capital Budgeting 1	Chapters 7,8	PS 2 due
13-Feb	Investment Decisions and Capital Budgeting 2	Chapters 7,8	
18-Feb	Practical Applications/ Problem Solving Day 3		
20-Feb	Review		PS 3 due
25-Feb	Midterm 1		
27-Feb	Equities	Chapter 9	
4-Mar	SPRING BREAK		
6-Mar	SPRING BREAK		
11-Mar	Risk and Return 1	Chapter 10	
13-Mar	Risk and Return 2	Chapter 10	
18-Mar	Portfolio Choice 1	Chapter 11	PS 4 due
20-Mar	Portfolio Choice 2	Chapter 11	
25-Mar	Practical Applications/ Problem Solving Day 4		
27-Mar	Review		PS 5 due
1-Apr	Midterm 2		
3-Apr	Cost of Capital	Chapter 12	
8-Apr	Capital Structure 1	Chapter 14	
10-Apr	Capital Structure 2	Chapters 14/15	PS 6 due
15-Apr	Capital Structure 3	Chapter 15,18	
17-Apr	Practical Applications/ Problem Solving Day 5		PS 7 due
22-Apr	Options and Derivatives 1	notes/slides only	
24-Apr	Options and Derivatives 2	notes/slides only	
29-Apr	Practical Applications/ Problem Solving Day 6		
1-May	Review		PS 8 due
	Final Exam, TBD		