The Wharton School   Mr Krishna Ramaswamy
Corporate Finance (100H)   Fall 2017

<div align="center">

FNCE 100: Corporate Finance (Honors)

FNCE [100]-302   MonWed 1:30pm   1201 SHDH

FNCE [100]-303   MonWed 3pm   1201 SHDH

</div>

1   Course Description

The purpose of this course is to introduce techniques of financial analysis, with applications to corporate finance. The concepts developed in Finance 100 form the foundation for all elective finance courses. The main topics covered include (1) the time value of money and the net present value rule; (2) valuation of bonds and stocks; (3) capital budgeting decisions; (4) uncertainty and the tradeoff between risk and return; (5) corporate financing decisions; and (6) options.

The course description above is for the standard offering of FNCE 100; here is a supplement that I use to describe the honors class:

> *The honors sections will take a more analytical and quantitative approach compared to other sections, and will cover some topics in more depth. My aim is to combine the teaching of all basic principles on which elective courses will build, but give you a strong analytical foundation and provide sufficient institutional exposure so that students can appreciate their practical application.*

Knowledge of basic statistics, basic calculus and simple regression analysis is presumed: familiarity w Microsoft Excel or other basic spreadsheet or advanced language will be useful.

Text

Course Material

- Required: Course notes that will be made available on CANVAS.

- Recommended: ***Corporate Finance*** by Ross, Westerfield, Jaffe & Jordan, 11th Ed.

  You should have access to this book. I treat it as companion reading. . . it will round out your knowledge. I stress the coverage in Chapters 4 to 22 in this introductory class; at this time I have asked the publishers for that subset to be made available in a paperback version. Copies will be available on Reserve. Most of the text is easy reading; many of the chapter-ending problems are reinforcing, especially if you've read the text, and I will suggest that you work out selected Problems that are more challenging. So. . . if you do choose to purchase the text, you may also wish to purchase the solutions manual, although I plan to place at least one copy on Lippincott Reserve by the second week's end. My homework assignments will select a few of these problems, but I will make up the remaining questions.

- A scientific or business calculator, for use in HWs and exams. It will be necessary for your calculator to have a x^y function. Most calculators have the basic financial functions you need:: on your work at home it's best to have access to Excel.

2 Course-related Information

Office & Hours

SHDH 3259, Campus 'phone 8-6206, email:: `krishna@wharton.upenn.edu`
Hours: Tues 1-2:50pm and Fridays 11-12noon.

Teaching Assistants

The TAs for this course are TBA. They will hold office hours (in SHDH 2400) and run an occasional review session; I will post their hours on Canvas after the first week.

Weekly Memos!!!

Every Thursday night I send an email to all of you, summarizing what was covered that week, and what will be covered the next week; it will have information on Problem Sets, Exams and so on, as reminders! *Ignore these emails at your peril.* Those of you who are non-Wharton students must send me an email if you do not receive it after the first full week... I may also post a copy of important emails on Canvas.

Course Requirements

Your **COURSE GRADE** will depend on your performance on:

- Five problem sets which add up to 10%;

- One computer exercise, *to be done in groups of no more than two students*, that will count for 5%, in which you will compute measures of risk, and value a chosen firm's equity, and assess its cost of capital;

- One Midterm that will count for 40%;

- One Final exam – given in the final exam period – which counts for 40%;

- Class *Preparedness* & Participation:: I call on people to share their ideas on material that was assigned or covered the previous week. You should stay on top of the readings and assignments and try to answer the questions. This counts for 3%.

Exam Schedule

- Midterm: Thursday, 2 November 2017, 6-8:10pm.

- Final Exam: Thursday, 14 December 2017, 6-8pm. (Date & Time set by registrar)

These dates are lapidary – written in stone!! All exams are closed book, closed notes – bring a calculator, some pens, and immobilize – drowning is preferred! – your cell-phone.

Both exams are cumulative – i.e. they will cover material up to and including the week before the exam; the final will emphasise the material covered after the Midterm, but will cover the whole course! Prior to each exam I will run review sessions and the TAs will have extended office hours.

There are no make-up dates for the midterm. . . .! The make-up date for the Final follows University policy and will take place the following semester. 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 will be subjected to a complete regrading.

You cannot work in groups on the problem sets! You can discuss the line of attack with a colleague or the TAs, but you must work on them yourself, in a straight-backed chair with several sharp pencils and a wet towel nearby. *If you didn't do the work, don't turn it in.* The computer assignment may be completed and handed in by groups of at most three students. Assignments and Problem Sets turned in late won't be graded.

Your Calendars

Mark the following dates into your calendars: as you can see, there is a steady flow of work demanded in this course! Remember, classes are on MW at 1:30 or 3pm.

Date	Event	Remarks
Thu 14 Sep	**Problem Set 1** Due	By 4pm in 2400 SHDH
Thu 28 Sep	**Problem Set 2**	By 4pm in 2400 SHDH
Thu 05 Oct	**Problem Set 3** Due	By 4pm in 2400 SHDH
Mon 16 Oct	No Class Today	Make-up TBA
Wed 18 Oct	REVIEW SESSION	In Class
Thu 26 Oct	**Problem Set 4** Due	By 4pm in 2400 SHDH
Thu 02 Nov	**Midterm Exam**	6-8pm ROOM TBA
Thu 29 Nov	**Problem Set 5** Due	By 4pm in 2400 SHDH
Thu 07 Dec	**Computer Assignment Due**	By 4pm in 2400SHDH
Mon 11 Dec	**Last Day of Class**	
Thu 14 Dec	**Final Exam**	6-8pm, Rooms TBA

Problem Sets will be distributed in Canvas. Each Problem Set is due on a Tuesday; I upload a *preliminary version* at least 12 days in advance when you can *begin* working on it; I add a few problems each day on material that's covered as we go along. On the Friday immediately prior to the Tuesday the assignment is due, the version will be marked *final*. This means that you can start working on the Problem Set typically 12 days in advance (!!!) and keep working on it as I add problems to the preliminary version, and finish it off the weekend before it's due. This promotes a steady effort and encourages revision of the material we cover. . . and it builds character!

Detailed Topics Outline

Here is a description of the topics we cover, with links to the Text's chapters. At this stage, the lectures needed for its coverage are tentative, so you should take these as approximate. Always rely on my Weekly Emails to review materials for the recently-concluded week, and to read suggested material for the following week.

Remember: the slides for each week will be posted on Canvas at the beginning of the week: **you must print them and bring them to class**!

Abbreviations: *Text* refers to Ross, Westerfield, Jaffe & Jordan's 11 Ed., henceforward RWJJ; numbers in **bold** are **required chapter readings**; numbers in [*square brackets*] are optional chapter reading.

Please keep in mind that the weekly email I send each Thursday will point you to specific readings and supplemental material on Canvas... the following is intended as a guideline!

1. **Introduction, FinMath & The Net Present Value Procedure: 3 sessions**

   Following a brief introduction and a quick review of Financial Math – useful to resolve ambiguous lingo and jargon early ! — we begin by developing basic ideas of Valuation and Discounted Cash Flow (DCF) often called the Net Present Value (NPV) approach. This is *the* very basic analytical tool in finance, which will be repeatedly used in different contexts and with increasing levels of sophistication in modeling. Some items we will learn along the way: *simple and compound interest, Present and Future Values; valuing an annuity, a perpetuity, a bond; the effective annual interest rate.* We learn how to compute payments and remaining values in a conventional fixed rate mortgage and a term loan; and to enable savings-investment calculations that befuddle lay people.

   *RWJJ [Chapters 1,2,3: Background Reading], Required Reading: **4***

2. **Investment Rules: 1 session**

   In viewing a prospective security (such as a share) when its market price is observable it is natural to compare the value we place on that security to its market price – and in answering that question we are led to ask whether the security offers a return that is higher or lower than some acceptable yardstick. This leads to the development of an internal rate of return (IRR) calculation which is oftentimes used as another valuation tool to assess prospective investments or projects. We'll compare the NPV and the IRR approach in this accept or reject decision, and in cases where we must choose among mutually exclusive opportunities; and discuss other rules (payback and profitability).

   *RWJJ **5, 6***

3. **Fixed Income Valuation 2 sessions**

   The market for fixed income instruments (commonly referred to as the *Bond Market*) is huge; governments (e.g. the US Treasury), government agencies, municipalities and corporations all borrow money on this organized market. We study the markets for Treasury Bills and the valuation of pure discount bonds; we'll use the prices of these bonds to value coupon bearing bonds, define their associated yields-to-maturity and make a connexion between these yields and the constellation of forward rates, which are rates quoted today for arranging a loan(borrowing) or an investment(lending money) with both start dates and repayment dates in the future. This discussion will culminate in the development of the *yield curve.*

   *RWJJ **8***

4. **Equity Valuation 2 sessions**

   We now apply the DCF method to value a share of a company's stock: a prospective buyer of a share of common stock anticipates a stream of cash dividends paid by the company out of its earnings each

period... in a a series of small steps we move from valuing this stream assuming the firm is infinitely-lived; then assuming a pattern of growth to the dividend stream over a finite period, perhaps with several stages of growth to becoming a mature firm; and analyzing what value accrues to the firm's future growth opportunities that rely on patents and R & D. *RWJJ 9*

5. **Capital Budgeting 3 sessions**

   In this part of the course we will confront the important managerial choice of computing the NPV of projects and investment proposals in practical contexts... there is no better way to do this than by example, and we'll do several. That's the best way to learn this subject. Here we must take practical considerations into account: accounting for depreciation in computing the cash flows from an investment, taking the effect of inflation, and comparing investments with different lives (horizons).

   RWJJ 6, [7.1-7.2]

6. **Risk and Return: computation and statistical measures 3 sessions**

   We'll study the behavior of returns to common stocks and bonds, over various horizons; we'll study their distributional properties (as random variables), developing notions of expected returns, standard deviations and correlations. We'll move to asking the natural question: what happens to our prospective return as we form portfolios (invest fractions of our wealth in several securities) – and we'll study the behavior of the expected return and risk measures of multiple-asset portfolios. We'll decompose – *parse* is a better word – the total risk of holding a security or a portfolio of securities into component sources, sometimes called systematic (or non-diversifiable) and unsystematic (or unique or idiosyncratic) risks, and demonstrate that the former is averaged in portfolios but the latter can be diversified away.

   *RWJJ **10,11.1-11.6***

7. **Asset Pricing Models 2 sessions**

   A natural question to ask is whether by aggregating the demands of risk-averse investors for bonds and stocks, and aggregating the supplies of these assets from corporations and others we can find an equilibrium relationship between the *expected return* to an asset (a reward for bearing risk) and its *risk* – and we study alternative *asset pricing models* but briefly. We must leave a little something for later electives to cover!

   *RWJJ **11.7-11.9, 12***

8. **Market Efficiency 1 session**

   Markets for risky assets react to new information: we study here notions of how efficiently they respond. We'll look at some evidence.

   *RWJJ **14.1-14.4**, [14.5-14,8]*

9. **The Capital Structure Decision 3 sessions**

   We've covered one important decision that financial managers make – that of choosing between risky projects in capital budgeting – and we discussed the Net Present Value Rule as a natural check of benefits over costs in present value terms. Here we'll study the capital structure decision: the way we *finance* or find the funds for these projects, by choosing a mix of bonds and stocks that constitute the principal forms of corporate liabilities: first in an idealised taxless world with perfect markets, and then in a world where there are taxes and costs of financial distress.

   A common way people proceed in this topic is to ask what the appropriate cost of capital is for the firm; and another way is to compute the Adjusted Present Value of a potential investment, taking the costs dictated by the chosen capital structure.

   *RWJJ [15], **16**, [17.1-17.4]*

10. **The Dividend Decision 1 session**

    We study here the way dividend payments to common shareholders are decided; additional topics include stock dividends and stock splits, the impact of taxes, and empirical evidence on dividend payouts.

    *RWJJ **19.1-19.6***

11. **Derivatives: Forwards, Options and their Applications 1-2 sessions**

    Innovation in financial markets – especially in the area of derivative securities – occurs rapidly. We study the basic forms of these derivatives and some elementary applications.

    *RWJJ **22.1-22.6, 25.1-25.4***

12. **Miscellaneous Topics:: Capital Raising by Investment Banks, The World of Mergers & Acquisitions, What Hedge Funds Do... Time Permitting**

    Here I'll discuss sundry topics.