

Venture Capital and the Finance of Innovation

FNCE 750

Fall 2015

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Office: 2433 SHDH

Lectures: Monday/Wednesday,

Section 1: 10:30-11:50am in JMHH 255

Section 2: 1:30-2:50pm in SHDH 109

Office hours with professor: Mondays, 3:45-5:15pm and by appointment, SHDH 2433

Office hours with TAs: Tuesdays, 3-4:30pm, SHDH 105

Course website on Canvas: <https://canvas.upenn.edu/courses/1295426>

PREREQUISITES

FNCE 611 (or 612) and 613 are both prerequisites. FNCE 613 may be taken concurrently with FNCE 750.

SUMMARY

The course covers the finance of technological innovation, with an emphasis on the quantitative methods useful for venture capital investing. This is first and foremost a finance course, so we will not cover the management, strategy, legal, marketing, and other non-financial topics that are also important in VC investing. The primary audience for this course is finance majors interested in careers in venture capital, entrepreneurship, or R&D-intensive companies (e.g., pharma, tech). There are five in-class quizzes and one team project with four deliverables throughout the semester.

GOALS FOR THIS COURSE

The course's goals, from most to least important, are

1. Help students gain a deeper understanding of finance
2. Provide a framework for making investment decisions about high-technology projects
3. Provide students with institutional background, specialized vocabulary, and important facts about the venture capital industry
4. Expose students to several promising new companies

GETTING HELP / TEACHING ASSISTANTS

Our excellent TAs for the semester are Dimpy Jindal and Yang Li, both MBA '16.

There are several ways you can get help with questions throughout the semester:

1. Post a question for general viewing on our course's Canvas site (address above). Navigate to "Discussions" on the far-left column, then post a reply under "General Course Questions." Your question will be answered either by me, one of the course TAs, or your classmates. (Help each other out!)

2. Ask me (Prof. Taylor) in weekly office hours (Mondays, 3:45-5:15pm, SHDH 2433)
3. Ask Yang or Dimpy in weekly office hours (Tuesdays, 3-4:30pm, room TBD)
4. Email Dimpy (Dimpy.Jindal.wg16@wharton.upenn.edu), Yang (yangli7@wharton.upenn.edu), or me (luket@wharton.upenn.edu).

The TAs and I promise answers to emails within 24 hours on weekdays. We cannot promise answers to emails sent less than 24 hours before due dates or quizzes.

HOW DOES THE COURSE COMPARE TO OTHERS?

The course complements several entrepreneurship courses offered in various Wharton departments. The most closely related course is MGMT 804, Venture Capital and Entrepreneurial Management. There will be some overlapping materials in the first half of the course, when we learn the basics of the VC industry, but virtually no overlap in the second half, when we build on the basics.

READINGS

- **Priority:** Each week I will email you the upcoming week's readings, and I will also tell you the priority of each reading.
- **Primary textbook:** *Venture Capital & the Finance of Innovation (VCFI)* (John Wiley and Sons), available in the bookstore. Make sure you buy the 2nd edition, which has a dark brown cover.
- **Cases:** There will be approximately five cases. Two will be on the course website, three will be on study.net.
- **Other required readings:** I will occasionally email you articles from the popular press and academic literature. We will sometimes discuss them in class, and they may appear on the quizzes. If you find an article you think your classmates may like, please email it to me.
- **Other optional readings:** I'll occasionally post on Canvas articles that are interesting but not required. These are in the "Optional readings" folder.
- **Review questions and solutions:** Details on these below.
- **Solutions to textbook exercises:** Posted on Canvas in folder "Exercises from the textbook."

GRADING

There are three components to the course grade, for a total of 100 points:

- Group project (40 points)
 1. Sourcing the deal (5 points, due Oct. 7 and 13)
 2. Valuing the company (15 points, due Nov. 3)
 3. In-class presentation (5 points, Nov. 30-Dec. 8)
 4. Partial valuation, term sheet, and negotiation strategy (15 points, due Dec. 13)
- Five in-class quizzes for a total of 40 points. I will drop your lowest score out of the five.
- Classroom participation (20 points)

A few other notes:

- The **in-class quizzes** will cover lectures, study questions, and readings. They only cover material since the previous quiz, so they're not cumulative. Each quiz will take 20-25 minutes.
- **No make-up quizzes.** Since I drop your lowest quiz grade, it is no problem to miss one quiz for any reason, including a job interview, vacation, or bad hair day. For that same reason, I will not offer make-up quizzes except in the event of grave illness or family emergency. In that event, contact the MBA program office before the quiz, ask for their guidance, and have them contact me before the quiz.
- The quizzes and projects may cover **material from outside of lectures.** I do this because we don't have enough time in lecture to cover everything you need to learn, and I have faith in your ability to learn some material on your own. Of course, the TAs and I are here to help you if you get stuck on this additional material.
- **Classroom participation** is based on the quality of participation, not just the quantity. Using your name card will help you get credit for classroom participation and will also help you get to know each other. I won't post videos of regular lectures, except in special circumstances like religious holidays.
- **Re-grade policy:** You have one week from the date on which the assignment or quiz is handed back to submit a written appeal that clearly identifies your section. Please hand the typed appeal to the receptionist in the finance department on the second floor of SHDH. We will then re-grade the entire assignment/exam, and as a result your score may go up or down. We will not re-grade parts of quizzes written in pencil.
- **Cheating.** By enrolling in this course, you are explicitly agreeing to abide by the Student Code of Conduct. If there is any doubt as to whether or not your actions constitute cheating, please contact me.
- **Cheat sheet.** The quizzes are closed book, although I'll provide a cheat sheet for you on two of the five quizzes. You are not allowed to bring your own cheat sheet. Don't worry, you won't have to do much if any rote memorization to prepare for quizzes.

TEAM PROJECT

- The semester-long **team project** integrates the course material and asks you to apply it to a real VC investment scenario. Your team will take on the role of VCs evaluating a hypothetical investment in a real company of your choosing. There will be four deliverables spaced throughout the semester:
 - **Sourcing the deal** (5 points): Find a company to analyze and submit a short memo describing the company and investment opportunity. The main requirements are that the company be privately owned (i.e., pre-IPO), less than 10 years old, and in the typical industries VC invest in. Most importantly, your team should choose a company that you're excited to learn about.
 - **Total valuation** (15 points): Perform a detailed DCF valuation of the company, including an in-depth analysis of addressable market size.
 - **In-class presentation** (5 points): Each team will give a short presentation on the company and your team's valuation in front of the class. These will happen at the end

- of the semester. If we don't have time for all teams to present during class, I'll ask a few teams to present to me outside of class time.
- **Partial valuation, term sheet, and negotiation strategy** (15 points). Write a term sheet that describes the terms of the deal, including security type, number of shares, amount invested, and protective covenants. You will also write an internal memo to the senior VC partners describing your negotiation strategy.
 - **Teams** should have three or four members. I may allow two or five members if there is a compelling reason (ask me). I want teams to be large for three reasons: this project requires a lot of work, I want every team to have a chance to present in front of the whole class, and I want to provide each team quality feedback. All members of the team will receive the same grade. Switching teams mid-semester is not allowed.
 - I will put **examples of successful projects from previous years** on Canvas.

HOW TO GET THE MOST OUT OF THE COURSE

From most to least important:

- Always print out the lecture slides before class. You'll find the notes on Canvas. Alternatively, bring the notes on an iPad or other tablet.
- Understand all the content and examples from lectures.
- Do the required readings before each lecture. This is especially true for cases and articles from the popular press, because we'll have classroom discussions about these. Take notes on the required readings, and study those notes before the quizzes.
- Find good teammates, and put in lots of hours on the group project. Look at the sample projects from last year to see what I am looking for.
- Do the **review questions**. For most lectures I will post review questions and their solutions (Canvas website → "Review Questions"). These are not turned in or graded. Working on these questions is an excellent way to prepare for the in-class quizzes. I strongly encourage you to work through the questions before consulting the solution. The review questions introduce some material that we did not cover in lecture. I expect you to learn this material on your own. On the bright side, you'll have the solutions, and the TAs and I are here to help if you need it.

FREE LUNCH!

I look forward to taking small groups of students out to lunch. You can sign up for these on Canvas. Here's how: Canvas website → Calendar → Scheduler. I will post an announcement on Canvas each time I schedule a new lunch. Feel free to sign up for multiple lunches. However, to make sure all students have a chance to join a lunch, if you have already been to one lunch then please wait until the day before to sign up for subsequent lunches.

COURSE SCHEDULE , TOPICS, AND READINGS

The schedule below is approximate, except for quiz and guest-speaker dates. Some topics will take longer than one lecture, others shorter. I will send you weekly emails letting you know exactly how to prepare for the coming week.

Guest speakers typically happen outside scheduled class time. The reason is that I teach multiple sections, and I cannot ask a guest speaker to speak multiple times. I realize this means some students will unfortunately have to miss the guest speakers because of schedule conflicts with other classes. Of course, if you don't have such a conflict, I expect you to be there. I always ask guest speakers if we can videotape, but they usually say no. I'm sorry if you have to miss a guest speaker. Guest speakers are not covered on the quizzes.

In the schedule below, VCFI refers to the course textbook, *Venture Capital and the Finance of Innovation*. I will email you additional required readings throughout the semester.

Date	Topic	Readings	Quizzes
Aug. 26	Introduction	Syllabus	
Aug. 31	The VC industry	VCFI Ch. 1	
Sept. 2	Structure of VC firms and funds	VCFI Ch. 2., Accel VII case	
Sept. 7	No class (Labor Day)		
Sept. 9	VC fund performance	VCFI Ch. 3	
Sept. 14	The risk-reward tradeoff in VC	VCFI Ch. 7.1, 4	
Sept. 15	(Tuesday) Guest speaker: Erik Hirsch from 4:30-5:50pm, SHDH 350		
Sept. 16	No lecture		
Sept. 21	VC investment process and due diligence	VCFI Ch. 7.2, Iron Gate case	
Sept. 23	Term sheets	VCFI Ch. 8, Iron Gate case	Quiz #1
Sept. 28	Preferred stock	VCFI 9.1	
Sept. 30	Dilution and anti-dilution protection	VCFI 9.2	
Oct. 5	Buffer for spillover		
Oct. 7	Evaluating high-growth opportunities	VCFI Ch. 10	Quiz #2
Oct. 12	An analysis of Atricure	HBS case	
Oct. 14	Valuation by DCF	<i>Valuation</i> Chapter 34	
Oct. 19	Valuation using multiples	VCFI Ch. 12	
Oct. 21	Buffer for spillover		Quiz #3
Oct. 26	Options in VC	VCFI Ch. 13, 16.1	
Oct. 28	Valuing preferred stock: Series A	VCFI Ch. 14	
Nov. 2	Valuing preferred stock: Later rounds	VCFI Ch. 15, 17	
Nov. 4	No lecture. Guest speaker: Josh Kopelman from 10:30-11:50am, room TBD		
Nov. 9	Angel financing structures		Quiz #4
Nov. 11	Buffer for 3rd guest speaker		
Nov. 16	Case: Endeca	Endeca A (HBS case)	
Nov. 18	Case to be determined		
Nov. 23	IPOs		
Nov. 25	No class (day before Thanksgiving)		
Nov. 30	Team presentations		
Dec. 2	Team presentations + Quiz		Quiz #5
Dec. 7	Team presentations, The future of VC		