

Venture Capital and the Finance of Innovation

FNCE 750

Fall 2014

Luke Taylor, Assistant Professor of Finance

Email: luket@wharton.upenn.edu

Office: 2433 SHDH

Lectures: Monday/Wednesday, 1:30-2:50pm, Lauder Fischer auditorium

Office hours with professor: Tuesdays, 4-5:30pm and by appointment, 2433 SHDH

Course website on Canvas: <https://canvas.upenn.edu/courses/1253663>

Piazza.com site: <https://piazza.com/upenn/fall2014/fnce750/home>

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 Petra Gao and Matias Melero, both MBA '15.

There are several ways you can get help with questions. Here are some options, from most to least preferred:

1. Post a question or comment on Piazza.com. This online forum is highly catered to getting you help fast and efficiently from myself, the TAs, and your classmates. It's also a good way for me to get a sense of where students need clarification. Rather than emailing questions to me or the TAs, I encourage you to post your questions on Piazza. Your question will be answered either by me, one of the course TAs, or your classmates. I'll be

sending more details about how to use Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

Find our class page at: <https://piazza.com/upenn/fall2014/fnce750/home>

2. Ask Matias in weekly office hours (Wednesdays, 4:30-6pm, SHDH 1201)
3. Ask me (Prof. Taylor) in weekly office hours (Tuesdays, 4-5:30pm, 2433 SHDH)
4. Email Petra (petrag@wharton.upenn.edu) or me (luket@wharton.upenn.edu)

We may anonymously post questions that you ask in office hours or by email to Piazza so all students can benefit.

The TAs and I promise answers to questions within 24 hours on weekdays. We cannot promise answers to questions 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 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)
 2. Valuing the company (15 points)
 3. Partial valuation, term sheet, and negotiation strategy (15 points)
 4. In-class presentation (5 points)
- 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 since the previous quiz. 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. You must use your name card to get credit for classroom participation. 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.
- **Closed-book policy, no cheat sheet.** The quizzes are closed book, and no cheat sheet is allowed. 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.
- **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.
- **In-class presentation (5 points):** Each team will give a short presentation on the company and deal in front of the class. These will happen at the end of the semester.
- **Teams** should have three or four members. I may allow two or five members if there is a compelling reason (email 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.

HOW TO GET THE MOST OUT OF THE COURSE

From most to least important:

- Always print out the lecture notes 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 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.

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 and due dates
Aug. 27	Introduction	Syllabus	
Sept. 1	No class (Labor Day)		
Sept. 3	The VC industry	VCFI Ch. 1	
Sept. 8	Structure of VC firms and funds	VCFI Ch. 2., Accel VII case	
Sept. 10	VC fund performance	VCFI Ch. 3, 7.1	
Sept. 15	The risk-reward tradeoff in VC	VCFI Ch. 4	
Sept. 17	VC investment process and due diligence	VCFI Ch. 7.2, Iron Gate case	
Sept. 22	Term sheets	VCFI Ch. 8, Iron Gate case	Quiz #1
Sept. 24	Preferred stock	VCFI 9.1	
Sept. 29	<Buffer for spillover>		
Oct. 1	Dilution and anti-dilution protection	VCFI 9.2	
Oct. 6	No lecture. Guest speaker: Erik Hirsch from 4:30-5:45pm, SHDH 351		
Oct. 8	Evaluating high-growth opportunities	VCFI Ch. 10	Quiz #2
Oct. 13	An analysis of Atricare		"Sourcing the deal" due
Oct. 15	Valuation by DCF	<i>Valuation</i> Chapter 34	
Oct. 20	Valuation using multiples	VCFI Ch. 12	
Oct. 22	No lecture: Guest speaker: John Locke from Accel, 4:30-5:45pm, SHDH 351		
Oct. 27	<Buffer for spillover>		Quiz #3
Oct. 29	Options in VC	VCFI Ch. 13	
Nov. 3	Valuing preferred stock: Series A	VCFI Ch. 14	"Total valuation" due
Nov. 5	Valuing preferred stock: Later rounds	VCFI Ch. 15, 17	
Nov. 10	Angel financing (convertible debt)		Quiz #4
Nov. 12	No lecture. Guest speaker: Izhar Armony from 4:30-5:50pm, SHDH 351		
Nov. 17	Case: Endeca	Endeca case	
Nov. 19	Managing the portfolio	Milliway Capital case	
Nov. 24	IPOs		
Nov. 26	No class (day before Thanksgiving)		
Dec. 1	Team presentations		
Dec. 3	Team presentations + Quiz		Quiz #5
Dec. 8	Team presentations, The future of VC	Kaplan and Lerner (2010)	
Dec. 15			"Partial valuation" due