

Venture Capital and the Finance of Innovation

FNCE 750

Spring 2013

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Office hours with Luke: Wednesdays, 4:30-6pm, and by appointment

Office hours with Jalaj (head TA): Tuesdays 4:30-6pm, SHDH Finance Department, Desk C

Course website on Canvas: <https://wharton.instructure.com/courses/942493>

When / where: Tues/Thurs, 1:30-2:50pm, JMHH 340

PREREQUISITES

FNCE 601 and FNCE 602 are both prerequisites. FNCE 602 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. The primary audience for this course is finance majors interested in careers in venture capital or in R&D-intensive companies in health care or information technology. There are two in-class tests, one final exam, and three homework assignments.

GOALS FOR THIS COURSE

We will use venture capital as a vehicle for studying several advanced topics in finance. The benefit of this approach is that course will be useful for students pursuing a wide range of careers in finance, not just in VC. The downside is that the course will cover some topics that are not useful to practicing VCs. 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

TEACHING ASSISTANTS

Head TA: Jalaj Garg, MBA class of '13

Email: jalaj@wharton.upenn.edu

I (Luke) am the one responsible for making sure you understand the course's content. However, if you have questions about **study questions**, **homework assignments**, or **practice exams**, please direct them to Jalaj in his weekly office hours (Tuesdays, 4:30-6pm, location TBD). You can also email these questions to Jalaj (jalaj@wharton.upenn.edu), but it will be easiest to communicate in office hours. Direct any other questions to me at office hours or by emailing

luket@wharton.upenn.edu. Jalaj and I promise a response within 24 hours on weekdays. We will not be able to answer emails sent less than 24 hours of due dates or exams.

Three additional TAs who will help with the course are Sarah Coyne, Jeff Fan, and Vikram Iyer.

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 overlapped materials in the first half (where we learn the basics of the venture capital industry), but virtually no overlap in the second half of the semester (where we build on the basics).

READINGS

- **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 four cases. Two will be on the course website, and two will be on study.net.
- **Other required readings:** I will occasionally email you articles from the popular press and academic literature. These are required reading. We will sometimes discuss them in class, and they may appear on exams. In addition to emailing you the articles directly, I will also store all these articles on Canvas in the “Required reading” folder. If you find an article you think your classmates may like, please email it with me.
- **Other optional readings:** I’ll occasionally post on Canvas articles that are interesting but not required. These are in the “Optional readings” folder.
- **Solutions to textbook exercises:** Posted on Canvas in folder “Exercises from the textbook.”
- **Review questions and solutions:** For most lectures I will post review questions and their solutions (Canvas website → “Review questions”). Working on these questions is an excellent way to prepare for the tests. These are not turned in or graded. Working through these questions will take a significant amount of time each week. I strongly encourage you to work through the questions before consulting the solution.

GRADING

There are four components to the grading, for a total of 100 points:

- **Test #1** (20 points): Thursday, February 28th, in class
- **Test #2** (20 points): Thursday, **April 4th**, in class
- **Class participation** (10 points)
- **Homeworks 1, 2, and 3** (total of 20 points)
- **Final exam:** (30 points): Monday, April 29, 3-5pm, location TBD

A few other notes:

- **Tests and the final exam** will cover lectures, study questions, homework assignments, and readings. The tests will not cover guest speakers. Tests and homeworks will cover material from outside of lectures. I do this because I don’t have enough time in lecture to teach you everything you need to learn, and I have faith in your ability to learn some material on your

own. Of course, Jalaj and I will be there to help you if you get stuck on this additional material.

- **Classroom participation** grades are based on quality of participation, not just quantity. You must use a name card to get credit for classroom participation. I won't post videos of regular lectures, except in special circumstances.
- **Re-grade policy:** You have one week from the date on which the assignment or exam 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 the exams written in pencil.
- You can see what **past tests** looked like by going to Canvas → "Tests" folder.
- **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.
- **Missing tests and exams.** If you know you will not be able to take the tests at their scheduled times, you should drop the class. I follow Wharton's official examination policy, which you can find here: <http://www.wharton.upenn.edu/mbaresource/misc/academic-policies.cfm>. Here is an excerpt from that website: "If you have documentable special circumstances such as time conflicts between multiple exams, illness, or grave personal difficulties such as a death in the family, you should petition the MBA Program Office, which will work with the faculty in appropriate cases to find a resolution. The MBA Program Office will require documentation of your conflict as a matter of course.... You should never approach your instructors with requests to reschedule exams or to make special accommodations."
- **Closed-book policy.** Exams are closed book. The only notes allowed during the in-class tests (final) exam are one (two) pieces of 8½" – 11" paper containing typed or hand-written notes on both sides of the paper.

HOMEWORKS ASSIGNMENTS

Here are a few rules about the three assignments.

- **Groups.** Homework assignments can be done individually or in teams of up to four members. Your teammates do not need to be in the same section as you. Working in teams is strongly encouraged but is not compulsory. All members of the team will receive the same grade. Switching teams during the semester is allowed. You do not need to create your groups on the Canvas website.
- **Comparing homework answers with other groups** is not permitted.
- **How to turn them in.** Each group will hand in one hard copy of the assignment at the beginning of lecture on the dates listed later in this syllabus. Please print names of all team members on the cover page of assignments.
- **Late assignments** will not be accepted, since I will post homework solutions immediately after the homework is due. In the event of an illness or family emergency, please make sure one of your teammates turns in the team's assignment.
- **Style counts.** Quality of the write-up will be factored into the homework grade. We will penalize poorly organized, poorly written, or excessively long write-ups.
- Please **type** all assignments.

- **Show your work.** For questions requiring calculations, please explicitly write out and explain your calculations in your write-ups whenever possible. Doing this, rather than merely copying the final numbers from your spreadsheets, has two benefits. First, it will help you prepare for examinations, when you will need to rely only on calculators. Second, it will help us understand what you did and give you credit accordingly.

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. 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 the lunch to sign up for your 2nd, 3rd, etc. lunch.

COURSE SCHEDULE , TOPICS, READINGS AND DUE DATES

The schedule below is approximate. Some topics will take longer than one lecture, others shorter. All parts of the calendar are subject to change except for test and exam dates. Please mark your calendar immediately for tests and the two scheduled guest speakers. There will be two additional guest speakers with dates TBD. 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	Due dates
Part I:	Jan. 10	Introduction and industry overview	VCFI Ch. 1	
VC Basics	Jan. 15	Structure of VC firms and funds	VCFI Ch. 2., Accel VII case	
	Jan. 17	Evaluating VC fund performance	VCFI Ch. 3, 7.1	
	Jan. 22	The risk-reward tradeoff in VC (1 of 2)	VCFI Ch. 4	
	Jan. 24	No lecture		
	Jan. 25	Guest speaker: Erik Hirsch, Chief Investment Officer, Hamilton Lane, 3:00-4:20pm, SHDH 351		
	Jan. 29	The risk-reward tradeoff in VC (2 of 2)		
Part II: Total	Jan. 31	VC investment process and due diligence	VCFI Ch. 7.2, Iron Gate case	
Valuation	Feb. 5	Term sheets	VCFI Ch. 8, Iron Gate case	
	Feb. 12	Dilution and anti-dilution protection	VCFI 9.2	HW 1 due
	Feb. 14	Evaluating high-growth opportunities	VCFI Ch. 10	
	Feb. 19	An analysis of Atricure	HBS case	
	Feb. 21	Valuation by DCF	VCFI Ch. 11	
	Feb. 26	Valuation using multiples	VCFI Ch. 12	
Part III: Partial	Feb. 28	Test #1 in class	VCFI Ch. 13	
Valuation	Mar. 2-10	SPRING BREAK		
	Mar. 12	Preferred stock	VCFI Ch. 9	
	Mar. 14	<Place holder, possible guest speaker>		
	Mar. 19	Options in VC	VCFI Ch. 13	HW 2 due
	Mar. 21	Valuing preferred stock: Series A	VCFI Ch. 14	
	Mar. 26	Valuing preferred stock: Later rounds	VCFI Ch. 15, 17	
	Mar. 28	Case: Endeca	Endeca A and B	
	Apr. 2	IPOs		
	Apr. 4	Test #2 in class		
	Apr. 9	No lecture Guest speaker: Josh Kopelman, First Round Capital, 4:30-5:50pm, location TBD		
Part IV:	Apr. 11	Pharma R&D and real options	VCFI Ch. 19, 21	HW3 due
The Finance of	Apr. 16	Pharma R&D and real options		
Innovation	Apr. 18	No lecture Guest speaker: Ted Schlein, KPCB, time and location TBD		
	Apr. 23	The future of VC	Kaplan and Lerner (2010)	
	Apr. 29	Final exam, 3-5pm, location TBD		

Remember that guest lectures won't be on the tests or exam.