

# Venture Capital and the Finance of Innovation

## PRELIMINARY SYLLABUS

FNCE 250 / 750

Spring 2010

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Office hours: Friday 1:30 – 3:00 pm, and by appointment. Please email suggested times.

Course webcafé at <https://webcafe.wharton.upenn.edu/eRoom/fnce/250-sp10-1>

Section 01 (FNCE 250): Mon/Wed 9:00 – 10:20, JMHH ???

Section 02 (FNCE 750): Mon/Wed 10:30 – 11:50, JMHH ???

Section 03 (FNCE 750): Mon/Wed 1:30 – 2:50, JMHH ???

### 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 four homework assignments and two in-class tests.

### COURSE AGREEMENT

This syllabus details the course content, material, and policies. By enrolling in this course, you are explicitly agreeing to abide by the policies set forth below. If you do not agree with any of these policies or do not wish to abide by them, I suggest that you take another course; the policies are non-negotiable.

### GOALS FOR THIS COURSE

In decreasing order of importance:

1. To help students get a deeper understanding of finance.
2. To teach and analyze a rigorous framework for making investment decisions about high-technology projects.
3. To provide students with institutional background, specialized vocabulary, and important facts about the venture capital industry.

### TEACHING ASSISTANTS

TA Email: [fnce250tas@gmail.com](mailto:fnce250tas@gmail.com)

The TAs share this address along with the professor.

The teaching assistants are Abhijith Eswarappa, Ashwin Pandith, and Allan Yang. Questions regarding the course material, especially those related to homework assignments and exams, should be submitted to the TAs—not the professor—by emailing [fnce250tas@gmail.com](mailto:fnce250tas@gmail.com). If the TAs cannot answer the question then they will forward the question to me. If you do not think the TAs will be able to answer your question, then please feel free to email me directly at [luket@wharton.upenn.edu](mailto:luket@wharton.upenn.edu). The TAs may post students' questions and answers on Webcafe, but they will not post the name of the student who submitted the question. The TAs and professor

do not guarantee replies to questions or emails submitted less than 24 hours before an exam or homework due date.

### **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).

This course also complements EAS 545, Engineering Entrepreneurship I, by Professors Tom Cassel and Jeffrey Babin. FNCE 250/750 goes in depth on finance topics in VC investing, whereas EAS 545 covers finance, strategy, marketing, operations, and other topics. EAS 545 uses the case method, whereas FNCE 250/750 uses the lecture method.

### **READINGS**

- **Primary textbook:** *Venture Capital & the Finance of Innovation (VCFI)* (John Wiley and Sons), available in the bookstore.
- **Cases:** There are two cases (Walnut and eDocs) you can download from [www.study.net](http://www.study.net).
- **Solutions to textbook exercises:** Posted on webcafe (Course Materials → Exercises from the textbook).
- **Other interesting, optional articles:** If you find an interesting article you'd like to share with the class, email it to me, and I'll post it on Webcafe (Course Materials → Interesting Articles). These are optional and won't be covered on tests, unless we discuss the articles during lecture.

### **GRADING**

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

- **Test #1** (25 points): March 3<sup>rd</sup>, in class.
- **Test #2** (35 points): April 2, in class.
- **Class participation** (10 points)
- **Homeworks 1, 2, and 3** (total of 20 points)
- **Homework 4** (10 points)

A few other notes:

- **Tests** will cover all material in the course, including lectures, homework assignments, readings listed in this syllabus, and guest speakers. These tests are required. If you will not be able to take the tests at their scheduled times, then please drop the class.
- **Classroom participation** grades will depend mainly on attendance and participation in the 4 guest lectures, and on participation during case discussions. The grade is based on quality of participation, not quantity. If you need to miss a lecture, that's fine--- do not notify me, but do make up for the absence by participating extra hard in other lectures. I will try to post videos of the guest lectures, since these occur outside scheduled lecture times. Obviously, you won't get participation credit for watching the video. I won't post videos of regular lectures, except in special circumstances.

- **Curve:** The undergrad and MBA sections will have separate curves.
- **Re-grade policy:** I will not discuss the grading of the homeworks or exams at any time; however, the TAs and I are always happy to discuss the content of the assignments and exams to ensure your understanding of the material. Here is the re-grade policy. You have one week from the date on which the assignment or exam is handed back to submit a written appeal. The appeal must be handed to the receptionist in the finance department on the second floor of SHDH. Please ask them to leave it in my mailbox. After receiving your written regrade request, the TAs (for homeworks) or I (for exams) will gladly regrade your entire assignment/exam to remedy the specific error that you have detected, as well as any other errors that may have been made. As a result, the re-graded score may increase, remain the same, or decrease. Importantly, **this is not a free option, nor is it an opportunity to debate the merits of my grading scheme.** Consequently, regrade requests that do not identify a clear error on our part are entirely unacceptable. For example, asking for more points because you "believe" that you deserve more credit is unacceptable. Similarly, just because "your friend" got more points than you for a similar answer is also unacceptable. If you would like this latter issue resolved simply send your friend to see me and I will adjust his/her score. To enforce this policy, any regrade requests that I deem inappropriate will have 10% deducted from its score. Further, there are no subsequent appeals of the grading. Exams may be written in pencil, but please do not try to change your answers after the exam, because I photocopy all the exams before grading them.
- **Cheating.** Cheating in any form is completely unacceptable. If there is any doubt as to whether or not your actions constitute cheating, please contact me. By enrolling in this course, you are explicitly agreeing to abide by the [Student Code of Conduct](#). If I find evidence of cheating, the student will receive a failing grade for the course, and I will refer the case to the Dean's office.
- **Exams finish on time.** I will penalize exams turned in late, that is, after I have told students to put down pencils/pens.
- **Missing tests or assignments** is only acceptable in the event of a serious illness or family emergency. In these cases, students should contact the MBA or undergraduate division office; it, in turn, will provide me with documentation of the illness or emergency. I will then make a judgment. In the event of a medical emergency, I will call your doctor on the phone to confirm your condition. An illness or family emergency in the week immediately before a homework due date does not constitute a valid excuse, since your teammates can cover for you. If you provide a valid excuse for missing a homework due date, then I will assign a higher weight to the other homework assignments. If it occurs for an in-class test, then I will add the weight to the other in-class test. Missing both tests will result in a failing grade.
- **Religious holidays.** Students who wish to observe official university religious holidays must inform their instructors within the first two weeks of each semester of their intent to observe the holiday. Students who make such arrangements will not be required to attend classes or take examinations on the designated days, and faculty must provide reasonable opportunities for such students to make up missed work and examinations. For more info, see <http://www.upenn.edu/almanac/v47/n02/religious.html>.
- **Closed-book policy.** Exams are closed book. Students may bring a single 8½" – 11" piece of paper containing hand-written notes on both sides of the paper. You may also bring

writing utensils and a calculator (no laptop) to each exam. Nothing else may be on the desktop or visible. I will check students' calculators before the exam.

## **HOMEWORKS ASSIGNMENTS**

Here are a few rules about the assignments. TAs may deduct points if you do not follow these rules.

- **Groups.** Homework assignments can be done individually or in teams of up to three (but no more than three). Students may form teams across sections. Working in teams is strongly encouraged but is not compulsory. If students work as a team, all members of the team will receive the same grade. You may switch teams during the semester.
- **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. Earlier sections may turn in homeworks at the beginning of the 1:30pm section.
- **Names on homework.** Students working in teams are responsible for printing 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. See note above on missing homeworks or exams.
- **Style counts.** Quality of the write-up will be factored into the homework grade, so poorly organized write-ups, poorly written write-ups, and excessively long write-ups will be penalized.
- **Typed.** We will not accept hand-written 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**

Wharton pays for us to go out for nice lunches together. I think these will be a nice chance for us to get to know each other and talk more about VC, college, life after college, etc. I will schedule several lunches throughout the semester. 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 2<sup>nd</sup>, 3<sup>rd</sup>, etc. lunch. You can sign up for these on Webcafe. Here's how: our webcafe site → Lunch signup sheets → Check the checkbox next to the date you want to attend → Click "sign up for slot/leave slot" → Click OK.

## **COURSE SCHEDULE , TOPICS, READINGS AND DUE DATES**

Please note that the schedule is approximate; some topics will take longer and some shorter than one lecture. VCFI refers to the textbook *Venture Capital and the Finance of Innovation*.

	Date	Topic	Readings	Due dates
Part I: VC Basics	Jan. 15	Introduction	VCFI Ch. 1	
	Jan. 20	Who are the VC players?	VCFI Ch. 2	
	Jan. 22	Returns to VC investments	VCFI Ch. 3	
	Jan. 27	The cost of capital in VC	VCFI Ch. 4	
	Jan. 29	The best VCs	VCFI Ch. 5	
	Feb. 3	VC around the world	VCFI Ch. 6	
Part II: Total Valuation	Feb. 5	The analysis of VC investments	VCFI Ch. 7	
	Feb. 10	Term sheets	VCFI Ch. 8	
	Feb. 12	Preferred stock	VCFI Ch. 9	
	Feb. 17	The VC method	VCFI Ch. 10	
	Feb. 19	DCF analysis of growth companies	VCFI Ch. 11	HW 1 due
	Feb. 24	Comparables	VCFI Ch. 12	
Part III: Partial Valuation	Feb. 26	Options in VC	VCFI Ch. 13	
	TBD	Midterm review session		
	Mar. 3	<b>MIDTERM</b> from 6-8pm, room TBD. NO LECTURE.		
	Mar. 5	Guest speaker: Ted Schlein: partner, Kleiner Perkins; president, National Venture Capital Association. Time and location TBD		
	Mar. 5	NO LECTURE (guest speaker)		
	Mar. 6-16	Spring break		
	Mar. 17	The valuation of preferred stock	VCFI Ch. 14	
	Mar. 19	Later-round investments	VCFI Ch. 15	HW 2 due
	Mar. 24	Participating convertible preferred	VCFI Ch. 16	
	Mar. 25	Guest speaker: Sherrill Neff, founding partner, Quaker BioVentures. 4:30 - 6:00 pm, SH-DH 351		
	Mar. 26	NO LECTURE (guest speaker on Mar. 25)		
	Mar. 31	Implied valuation	VCFI Ch. 17	
	Apr. 2	Complex structures	VCFI Ch. 18	
Apr. 7	IPOs		HW3 due	
Part IV: The Finance of Innovation	Apr. 9	R&D finance	VCFI Ch. 19	
	Apr. 14	Monte Carlo simulation	VCFI Ch. 20	
	Apr. 16	Real options	VCFI Ch. 21	
	Apr. 21	Binomial trees	VCFI Ch. 22	
	Apr. 23	The future of VC		HW 4 due
	Apr. 28	Final exam review session (time and location tbd)		
	TBD	Final exam review session		
	May 5	<b>FINAL EXAM</b> , 3-5pm, room TBD		