



VENTURE CAPITAL AND THE FINANCE OF INNOVATION

FNCE 250

SPRING SEMESTER 2017

Pavel Zryumov, Assistant Professor of Finance

Email: pzryumov@wharton.upenn.edu

Office: 2452 SHDH

Lectures: Monday/Wednesday,

Section 1: 9:00am - 10:20am in JMHH 250

Section 2: 10:30am - 11:50am in JMHH 250

Office Hours: Tuesday 3:00pm - 4:20pm and by appointment, 2452 SHDH

Course website on Canvas: <https://canvas.upenn.edu/courses/1349715>

PREREQUISITES

FNCE 100 and FNCE 101 are both prerequisites. FNCE 101 may be taken concurrently with FNCE 250.

SUMMARY

The course covers the finance of technological innovation, with an emphasis on the quantitative methods useful for venture capital investing. We will cover all the stages of investment in early stage high-growth companies, from the seed funding of a novel idea to venture capital rounds to a successful exit, be it an IPO or through M&A. 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 students with 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

HOW DOES THIS COURSE COMPARE TO OTHERS?

The course complements several entrepreneurship courses offered in various Wharton departments. The most closely related course is MGMT 264, Venture Capital and Entrepreneurial Management. There will be some overlapping topics 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.

MATERIALS AND READINGS

REQUIRED

- **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, which will be posted online.
- **OTHER:** A number of recent articles from the popular press and academic literature will be posted online. Some of them will be discussed in class and may appear on the quizzes.

OPTIONAL

- **REVIEW QUESTIONS AND SOLUTIONS:** Practice problems and review questions will be posted online together with the solutions.
- **SOLUTIONS TO TEXTBOOK EXERCISES:** Posted on Canvas in the "Exercises from the textbook" folder.
- **OTHER:** Additional interesting and relevant materials will be posted online in the "Optional readings" folder. They are not required and will not appear on quizzes.

GRADING

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

- **QUIZZES** (40 points)
- **TEAM PROJECT** (40 points)
- **CLASSROOM PARTICIPATION** (20 points)

QUIZZES

- Best 4 out of 5 count towards the final grade.
- **FORMAT:** in-class, closed book, 20-25 minutes long.
- **SCOPE:** The quizzes will cover only required material which may include material outside of lectures.
- **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, a vacation, or a bad hair day.
- **RE-GRADE POLICY:** Written appeals are accepted within one week of the assignment return date. Please hand the typed appeal to the receptionist in the finance department on the second floor of SHDH. The entire assignment/exam will be regraded, as a result your score may go up or down. Parts of quizzes written in pencil will not be re-graded.

TEAM PROJECT

TEAMS

Every team should have three or four members. All members of the team will receive the same grade. Switching teams mid-semester is not allowed

PROJECT

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, Feb. 22):** Find a company to analyze and submit a short memo describing the company and the investment opportunity. The main requirements are that the company be privately owned (i.e., pre-IPO), less than 10 years old, and in one of 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, Apr. 3):** Perform a detailed DCF valuation of the company, including an in-depth analysis of addressable market size.
- **IN-CLASS PRESENTATION (5 points, Apr. 19-28):** 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.
- **PARTIAL VALUATION, TERM SHEET, AND NEGOTIATION STRATEGY (15 points, Apr. 29):** 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.

FREE LUNCH

I look forward to taking small groups of students out to lunch. You can sign up for these on Canvas. I will post an announcement on Canvas each time I schedule a new lunch.

COURSE TOPICS AND SCHEDULE

The schedule below is approximate, except for quiz, project, and (scheduled) guest-speaker dates. VCFI refers to the course textbook, *Venture Capital and the Finance of Innovation*. I will send you weekly emails with additional required readings and will let you know exactly how to prepare for the coming week.

Date	Topic	Readings	Quizzes and Due Dates
Jan 11	Introduction	Syllabus	
Jan 18	The VC industry	VCFI Ch. 1	
Jan 23	Structure of VC firms and funds	VCFI Ch. 2., Accel VII case	
Jan 25	Michael Ryan (Hamilton Lane)		
Jan 30	VC fund performance	VCFI Ch. 3	
Feb 1	The risk-reward tradeoff in VC	VCFI Ch. 7.1, 4	
Feb 6	Due Diligence and Investment Process	VCFI Ch. 7.2, case TBD	
Feb 8	Term Sheets	VCFI Ch. 8, case TBD	Quiz #1
Feb 13	Preferred stock	VCFI 9.1	
Feb 16	Thursday: Andy Rachleff (Wealthfront)		
Feb 20	Preferred stock (continued)		
Feb 22	Dilution and anti-dilution protection	VCFI 9.2	“Sourcing the Deal” due
Feb 27	Evaluating high-growth opportunities	VCFI Ch. 10	Quiz #2
Mar 1	Buffer for 3rd guest speaker		
Mar 13	Case: An analysis of Atricure		
Mar 15	Valuation by DCF	Valuation Chapter 34	
Mar 20	Valuation using multiples	VCFI Ch. 12	Quiz #3
Mar 22	Case: TBD		
Mar 27	Buffer for spillover		
Mar 29	Options in VC	VCFI Ch. 13, 16.1	
Apr 3	Valuing preferred stock: Series A	VCFI Ch. 14	“Total Valuation” due
Apr 5	Valuing preferred stock: Later rounds	VCFI Ch. 15, 17	
Apr 10	Angel financing structures		Quiz #4
Apr 12	Case: TBD		
Apr 17	Exit: IPOs		
Apr 19	Team presentations		
Apr 24	Team presentations		Quiz #5
Apr 26	Buffer for spillover		
Apr 29			“Partial Valuation” due