UNIVERSITY OF CALIFORNIA, DAVIS
GRADUATE SCHOOL OF MANAGEMENT

Venture Capital and the Finance of Innovation

Winter 2015	MGT 265	Professor
2310 Gallagher	Daytime MBA	Ayako Yasuda
M 12:10-3:00pm		3206 Gallagher Hall

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Office hours: By appointment. Please email suggested times. Questions can be asked via email as well.

This 3-unit course will introduce the students to the world of venture capital (VC) and the finance of innovation. It will focus on the finance principles related to the risk & return of venture capital industry, valuation of VC target companies, the structuring of VC term sheets, and issues related to financing of innovative projects in sectors such as energy, technology, and healthcare.

The target audience for the course are MBA students who are interested in learning about the relevance of VC industry in their career paths, for example, (i) how start-up ventures might consider getting funding from VC funds (as opposed to angels or banks), (ii) how entrepreneurs might approach term sheet negotiation and structuring with prospective VCs, (iii) how large institutional investors decide whether/how much to invest in VC (as opposed to other asset classes such as public equity and bonds), and (iv) how incorporating flexibility (real options) might alter the NPV of innovative projects in, e.g., alternatively energy. Thus, topics covered apply broadly to those who are interested in entrepreneurship, corporate finance, investment management, and general management.

We start by outlining how venture capital funds are organized, how revenues and profits are split between venture capitalists and investors backing the funds, how and from whom they raise capital, and in what type of firms they typically invest. A good portion of this section will examine the risk / return profile of venture capital and whether venture capital "beats the market", whether it lowers risk of the limited

partner's portfolio, and how the high uncertainty of growth firms should be priced. A critical question is: How much of venture risk is beta risk vs. idiosyncratic risk?

The second section of the course will examine enterprise valuation. Special attention will be given to the valuation process for small, illiquid, high-growth companies versus mature companies. For instance, how do you bound reasonable estimates for revenue growth, margins, and capital productivity when little historical data is available? Questions are also explored for venture capital in the international context. Here, we revisit the question of the risk / return relationship for international VC investments.

The third section of the course will examine valuation techniques necessary to value complex securities associated with venture capital and high growth companies. Preferred stock held by venture capitalists has conversion features that resemble a combination of debt and equity. Therefore, option-pricing models must be employed to determine their true economic (versus fully-diluted) value. Tools specifically developed for this segment of the book are used to facilitate learning complex features of VC term sheets and to enable visualization of how exit values are split between entrepreneurs and VCs.

The fourth section of the course will examine broader issues related to funding innovative projects, in which high degrees of uncertainty — technological, business/market-related, and regulatory — are inherent. A focus will be placed on conceptualizing and quantifying the value of delaying decisions when doing so Feb lead to better decision making, using real options framework.

READINGS

The required text for the course is **Venture Capital & the Finance of Innovation** (John Wiley and Sons), 2nd edition, by Andrew Metrick and Ayako Yasuda. A textpak consisting of cases (to be used in class and in assignments) will be available on study.net. Lecture notes will be made available on the course web page by the evening before the class.

EVALUATION

There will be an in-class midterm counting for 20%, and a final exam counting for 40% of the course grade. The final exam will cover the entire course. There will also be 4 assignments counting for 24% of the course grade as well as an in-class quiz counting for 6%, and class participation will count for 10%.

For students who show an exceptional improvement in performance in the final exam compared to the midterm (either an increase of at least 20 percentiles in rankings or 20% in scores) the weights will be changed to 10% for the midterm and 50% for the final. To determine the final grade distribution, a numerical weighted average of the four components will be computed. If medical problems force you to miss an examination, please contact me ***before*** the exam.

STUDY TEAMS

The homework assignments are to be done in teams of three to four students. All members of the team will receive the same grade. Students are responsible for printing names of all students on the cover page of assignments.

ASSIGNMENTS

Each homework assignment will be evaluated on a 10-point scale. They will be used as learning tools for vocabulary and for practical working of concepts. **Please use no more than 3 pages of write-ups and 3 pages of attachments (tables, charts) for each assignment.** 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 me understand what you did and give you credit accordingly. In completing the assignments, you Feb not use any materials from previous offerings of the course.

TENTATIVE COURSE SCHEDULE, READINGS AND DUE DATES

Please note that the schedule is approximate; some topics will take longer than a session and others will take a shorter time. If anybody has a problem meeting a due date because of religious holiday, please let me know as soon as possible. Extensions will be granted in such cases. VCFI refers to the textbook *Venture Capital and the Finance of Innovation*. In addition, handouts will be posted on the course web page as supplemental readings.

	Date	Topics	Reading/due date
1	Jan.5 (M)	VC Organization Structure and Partnership Agreements with Investors (LPs)	VCFI Ch. 1 & 2
2	Jan. 12 (M)	VC as an Asset Class: Risk and Returns	VCFI Ch. 3, 4 & 7
	Jan. 26 (M)		**HW #1 due**
3	Jan. 26 (M)	VC in the Global Economy / The Best VCs/ Capital structure of VC-backed companies	VCFI Ch. 5-6, 8-9
4	Feb. 2 (M)	Capital structure of VC-backed companies VC Method	VCFI Ch. 8-9 &10
	Feb. 7 (Sat)		**HW #2 due**
5	**Feb 9 (M)**	**In-class Midterm (12:10-1:25pm)*** /Valuing high-growth companies with DCF and multiples	VCFI Ch. 11-12
6	Feb 23 (M)	Call option valuation / VC preferred stock valuation using option pricing	VCFI Ch. 13-14 (16 – time permitting)
7	**Mar. 2 (M)**	**In-class quiz (12:10-12:30pm)** / Participating Convertible Preferred Stock in VC / **Speaker Session (1:45-3:00pm)***	VCFI Ch. 16-17
	Mar. 9 (M)		**HW #3 due**
8	**Mar. 9 (M)**	Multiple VC Rounds / R&D finance (time-permitting)	VCFI Ch. 15, 19
9	**Mar** 16 (M)	Real option valuation in R&D / Wrap-up	VCFI Ch. 19&21
	Mar. 20 (F)		**HW #4 due**
	Mar. 23 (M)	**Final Exam 12:10-3pm**	**2310 Gallagher**

* Time and date subject to change.