

# Venture Capital & the Finance of Innovation

## Spring 2012, version 1

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This course will focus on the primary activities performed by venture capital professionals, including how they raise capital, how they structure their funds, as well as how they select, fund, and exit high-growth privately-held companies.

- We start by outlining **how venture capital funds are organized**, how and from whom they raise capital, and in what type of firms they typically invest. A good portion of the 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 great uncertainty associated with growth firms should be priced.
- The **second section** of the course will examine corporate valuation and value drivers. Given the incredible uncertainty associated with high-growth companies, alternative methods such as **key value driver models and comparable transactions** must be employed to triangulate results. 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 of revenue growth, operating margins, and capital productivity when little historical data is available?
- 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 capitalist has conversion features that resemble a combination of debt and equity. Therefore, options models must be employed to determine their economic (versus fully-diluted) value.

**Complementary Classes:** The class will focus on the financial aspects of valuing and funding high growth companies. A **critical skill** to venture capital that we will cover *only briefly* is screening and selecting potential investments. To develop a well-rounded skill set, I recommend Entrepreneurship (MGMT 801) and Venture Capital and Entrepreneurial Management (MGMT 804).

## Reading Material

The course will rely on a textbook and a few supplemental readings (which can be found on webcafe). The textbook can be purchased in the campus bookstore or on Amazon.com:

- Venture Capital and the Finance of Innovation (2<sup>nd</sup> edition) by Andrew Metrick and Ayako Yasuda, 2011, John Wiley & Sons, Inc, NY.

The course will also rely on chapters from a secondary text:

- Valuation: Measuring and Managing the Value of Companies (5<sup>th</sup> edition) by Koller, Goedhart, and Wessels, 2010, John Wiley & Sons, Inc, NY.

Chapters from Valuation will be provided for you on webcafe. Lecture notes will be distributed in class and will also be available on webcafe. There will be a lot of additional material (mostly lecture notes), so please purchase a binder for course slides and articles.

## In-Class Requirements

Please bring three items to EVERY class: your name tent, the lecture's notes, and a basic calculator. As the semester progresses, please remain diligent. I tend to be relentless with those who come to class empty-handed.

## Assignments & Grading

There will be three individual assignments (5% each), two group projects (25% total), and two exams (30% each). For individual assignments, I expect you to work alone and hand in your own work. You can discuss class tools, but not the assignment. For group work, please self-select groups of between 3-5 people, no exceptions. If you have six people, create two groups of three. Also, you can form teams across sections.

Class participation will not formally be scored, but students at the grading cutoffs will be evaluated for their ability to generate an active and positive class environment. The assignment/exam due dates and grading breakdown will be as follows:

	<b>Assignment/Exam</b>	<b>Due Date</b>	<b>Grade</b>
1	Individual Assignment: Portfolio Review	2/1	5%
2	Individual Assignment: LP/GP Contracts	2/13	5%
3	Midterm Exam	3/14, in-class	30%
4	Group Project: Strategic Assessments	3/21	10%
5	Group Project: Private Company Valuation	4/2	15%
6	Individual Assignment: Capital Structure	4/16	5%
7	Final Exam (as assigned by registrar)	Wed 5/2, 3-5pm	30%

## **Teaching Assistants & Office Hours**

We have two teaching assistants for the class. If you have questions concerning assignments or practice exams, please e-mail your primary TA first. If they are out of town, only then reach out to the other TAs. Again, all questions concerning assignments and practice exams will be redirected to TAs. If you have questions about the course notes or content beyond the class, please reach out to me directly.

### ***The teaching assistants are:***

The lead teaching assistant is Peter Gadjos. The remaining TAs and office hours will be reported in an updated edition of this syllabus.

# Venture Capital and the Finance of Innovation

## Course Schedule

	Note	Date	Session Topic	Associated Reading
<b>Section 1: The Limited Partner's Perspective: Venture Capital Funds</b>		1/18	Course Overview	None
	1	1/23	Introduction to Venture Capital: The Venture Capital Cycle & Industry Statistics	Metrick Chapter 1 "It Ain't Broke: The Past, Present, and Future of Venture Capital"
	2	1/25	Raising LP Capital: Organizational Structure and the Limited Partner	Metrick Chapter 2
	3	1/30	Raising LP Capital: Partnership Agreements and GP Compensation	"The Economics of Private Equity Funds," Metrick and Yasuda.
	4	2/1*	Venture Capital Returns: How the CAPM applies to Limited Partners	Metrick Chapter 4
	5	2/6	Venture Capital Returns: How the CAPM applies to Entrepreneurs	No Reading
	6	2/8	Venture Capital Returns: Are High Hurdle Rates Justified? Empirical Evidence	Metrick Chapter 3
	7	2/13*	Choosing Amongst VCs: Measuring Firm Performance and Persistency of Venture Capital Performance	Metrick Chapter 5

\* There is an assignment due today!

<b>Section II: Valuing High Growth Companies</b>		2/15	No Class	None
	8	2/20	Screening Startup Opportunities	Metrick Chapter 7
	9	2/22	Key Value Drivers	Valuation 4 <sup>th</sup> Edition Chapter 3
	10	2/29	Assessing Value Drivers: the Case of AtriCure	Valuation 4 <sup>th</sup> Edition Chapter 6
	11	3/12	Value Drivers and Cash Burn	TBD
		<b>3/14*</b>	<b>Midterm Exam</b>	<b>None</b>
	12	3/19	Venture Capital Valuation: Mapping Value Drivers to DCF.	Metrick Chapters 10 -11
	13	3/21*	Using Comparables (Multiples) to Bound the Valuation and Determine the Exit Price	Metrick Chapters 12
<b>Section III: Term Sheets, Capital Structure &amp; Financing Growth</b>	14	3/26	Term Sheets: Matching VC Needs with Entrepreneurial Incentives	Metrick Chapter 8
	15	3/28	Term Sheets: Down Rounds and Anti-Dilution Provisions	"The Venture Capital Anti-Dilution Solution" Wilson Sonsini
	16	4/2*	Term Sheets: Security Design and Capital Structure in VC Backed Firms	Metrick Chapter 9
	17	4/4	Fundamentals of Options Pricing	Metrick Chapter 13
	18	4/9	Valuation of Series A Preferred	Metrick Chapter 14
	19	4/11	Valuation of Series B Preferred	Metrick Chapter 15
	20	4/16*	Valuation of Later Rounds and Complex Securities	Metrick Chapters 16
	21	4/18	Angel Financing & Convertible "debt"	TBD
	21	4/23	Going Public: IPO Process, Book Building & Auctions ( <u>only time permitting</u> , which is unlikely!)	A Guide to the Initial Public Offering Process (Ellis, Michaely & O'Hara)

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