

Venture Capital & the Finance of Innovation

Fall 2022 in SSF

Professor David Wessels

Department of Finance, the Wharton School

This course will focus on the primary activities performed by venture capital professionals, including how they organize and raise investment 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. We discuss limited partner agreements and how the structure of these agreements can drive certain types of behavior. We close the module with a discussion on whether venture capital as an asset class “beats” the market and how to measure performance by investment fund.
- The **second section** of the course examines how to screen, value, and analyze high-growth, money losing companies. We will examine two valuation models in particular: the “sweet spot” methodology and the venture capital method. We highlight how these models differ from discounted cash flow. We close the section with a discussion of cash burn.
- The **third section** of the course will examine term sheets, including the language of pre- and post-money, employee options, pro-rata rights, rights of first refusal, anti-dilution ratchets, and liquidation preferences. Since preferred stock has conversion features that resemble a combination of debt and equity, we create next generation options models to determine their economic rather than fully diluted value, common to the industry.

In this class, we take the perspective of the venture capitalist. When possible, I will try and pepper in founder perspectives as well!

Complementary Classes: The class will focus on the financial aspects of valuing and funding high growth companies. We will not cover how to create business plans or manage a startup. To develop a well-rounded VC skill set, I recommend Entrepreneurship (MGMT 231/801) and Venture Capital and Entrepreneurial Management (MGMT 264/804).

Reading Material

The course will rely on a textbook and supplemental readings. The textbook can be purchased in the campus bookstore or online:

Venture Capital and the Finance of Innovation (3rd edition) by Andrew Metrick and Ayako Yasuda, 2020, John Wiley & Sons, Inc, NY.

The course will also rely on supplemental readings. Supplemental readings are meant to complement a particular lecture. Please note that the readings will not match the classroom content perfectly. Instead, they are meant to provide you with helpful language and context. Most readings are just a few pages. Supplemental readings can be found on canvas under Files/Readings.

Reading	Name
Reading 1	NVCA Annual Report, Pages 9-12 and 53-66 (if/as helpful)
Reading 2	The Faulty Metric at the Center of Private Equity's Value Proposition
Reading 3	Calculating Burn Rates and Is My Startup Burn Rate Normal?
Reading 4	Why Unicorns are Overvalued
Reading 5	CooleyGo on down rounds
Reading 6	CooleyGo on convertible debt primer
Reading 7	CooleyGo on convertible debt caps

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 (15% total), two group projects (25% total), and a final exam (60%). 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. You can switch groups between projects, but this is NOT recommended. For classes with multiple sections, you can form groups 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:

	Assignment/Exam	Expected Due Date	Grade
1	Individual Assignment: LP/GP Contracts	10/10/2022	5%
2	Group Project: Strategic Assessments	10/31/2022	10%
3	Group Project: Private Company Valuation	11/7/2022	15%
4	Individual Assignment: Term Sheets	11/30/2022	5%
5	Final Exam	12/8/2022 at 10am	60%
6	Individual Assignment: SAFE Notes	12/12/2022	5%

Assignment due dates will follow the schedule above unless we have not covered the relevant material. Please check the assignment due date on canvas, as the date on canvas will supersede the expected date above when necessary. The final exam date is fixed and will not change. Please make the appropriate travel accommodations, as we cannot accommodate alternative testing dates.

Teaching Assistant & Office Hours

The TA for VC in San Francisco will be **Puja Gorai** <pujag@wharton.upenn.edu>. If you have questions concerning assignments or practice exams, please e-mail the TA first. If you have questions about the course notes or content beyond the class, please come see me.

Office Hours: Given the co-location of everyone in a small space, Puja will hold office hours by appointment. Just let her know when you need to meet. I will be available most days before class, or between classes when double-sessions are scheduled. End of day, we can chat, but I am often wiped!

Regrade policy. All regrade requests must be submitted in TYPE and emailed to your primary TA within 10 calendar days following the return of your graded work.

Academic Integrity

I expect you to follow Penn's code of academic integrity when completing problem sets, group work, and exams. Allegations of impropriety should be brought directly to me, which in turn will be referred to the University Honor Council. For more, see:

<https://catalog.upenn.edu/pennbook/code-of-academic-integrity/>

The most common violation is turning in another person's work, which results in a semester-long suspension by the University. This course is meant for you, make sure it reflects your contributions!

I look forward to meeting each one of you this semester! Best, Prof. Wessels.

Section	Week	Date	Note	Topics	Reading for Session
Section 1: The Limited Partner's Perspective	1	Monday 9/26/2022	1	Introduction to Venture Capital	Metrick 1-2, 5
			2	The Venture Capital Cycle	Reading 1, pages 8-11
			3	Raising LP Capital: Partnership Compensation	
			4	Raising LP Capital: The Economics of Carry	
Section 2: Valuation and Analysis of High Growth Companies	2	Monday 10/3/2022	5	Raising LP Capital: Does VC beat the market?	Metrick 3, 7
			6	Choosing amongst funds: Performance Metrics*	Reading 2
			7	Screening Startup Opportunities	
			n/a	Continued	
Section 3: Term Sheets, Capital Structure & Financing Growth	3	Monday 10/24/2022	8	Startup Valuation: The Sweet Spot	Metrick 10-12
			9	Startup Valuation: The Venture Capital Method	Reading 3
			10	Startup Valuation: Incorporating Fees and Carry	
			11	Managing Cash Burn	
Section 3: Term Sheets, Capital Structure & Financing Growth	4	Monday 10/31/2022	12	Term Sheets: Valuation and Employee Options	Metrick 8-9
			13	Term Sheets: Preferences and Other Key Items	Reading 4, 5
			14	Term Sheets: Preferred Stock Payoff Diagrams	
			15	Term Sheets: Anti-Dilution Protection	
	5	Virtual 11/10/2022	16	Fundamentals of Options Pricing*	Metrick 13-15, 17
			17	Valuation of Series A: Using the Model	Reading 6
6	Virtual 11/30/2022	18	Valuation of Series A: How VCV Works		
		19	Valuation of Series B		
6	Monday 12/5/2022	20	Series B: ProRata Rights	Reading 6-7	
		21	Angel/SAFE Financing: The Discount	Postmates Case	
		22	Angel/SAFE Financing: The Cap		
		n/a	Managing the Exit: The Case of Postmates		

* I prefer to let the natural flow of our class discussion dictate our pace. If we fall behind the schedule above, the lecture on performance metrics and/or options fundamentals will be shortened or eliminated.