

Northwestern University McCormick School of Engineering and Kellogg School of Business (MBAi)

MEM 490 : Gen 1 Capital - Technology Venture Capital Investing Syllabus

[Gen 1 Capital](#) is a community of investors and entrepreneurs looking to better the world through investing in the future of health, work, education, connectivity, and computing. This course enables students to obtain practical skills in a hands-on learning experience and be part of a venture capital team. It provides a mindset and perspective of a VC, and then goes into the operating topics to review a potential investment. The intent is to make VC accessible to students to help jump-start their careers in investing or entrepreneurship.

DATE / TIME	Fridays 9:00 am - 12 noon CDT from April 1 - June 3, 2022
LOCATION	Hybrid Class - Zoom McCormick Education Center (MEC) / North Campus Parking Garage Padula Classroom - Room 1430 2311 Campus Dr Evanston, IL 60208, USA
REQUIRED NDA	Please sign and email the NDA prior to April 1, 2022 to Satu Trivedi and Julian Cheng
PROFESSOR	Julian Cheng, Founder Gen 1 Capital <ul style="list-style-type: none"> • j@gen1vc.com • Gen 1 Capital • https://www.linkedin.com/in/jchengvc • https://twitter.com/juliancheng • https://www.linkedin.com/company/gen1capital • https://twitter.com/Gen1VC
TA	Satu Trivedi, MEM <ul style="list-style-type: none"> • satutrivedi2024@u.northwestern.edu • www.linkedin.com/in/satutrivedi
COURSE PACKET AND TEXTBOOK	HBR Case Packet (You cannot share a case pack with other students per HBS Press) Recommended Books:

	<ul style="list-style-type: none"> ● Secrets of Sand Hill Road: Venture Capital and How to Get It by Scott Kupor ● The Power Law: Venture Capital and the Making of the New Future by Sebastian Mallaby ● Venture Deals: Be Smarter Than Your Lawyer and Venture Capitalist by Brad Feld and Jason Mendelson ● Venture Capital Deal Terms: A guide to negotiating and structuring venture capital transactions by Harm De Vries, Menno Van Loon, and Sjoerd Mol ● Zero to One: Notes on Startups, or How to Build the Future by Peter Theil and Blake Masters
OFFICE HOURS	Please email TA, Satu Trivedi , to schedule a time.
COURSE OVERVIEW	<p>In the Technology Venture Capital Investing Practicum, students will work with Gen 1 Capital - an early-stage technology venture capital firm in order to learn many aspects of venture capital - technology and market research, identifying promising startups, working with founders, financial modeling, conducting technical due diligence, decision making, supporting portfolio companies, marketing, working with other venture capital investors, identifying new technologies and investment areas, and more.</p> <p>We will cover different topics in investing and operating through the lens of an investor. Investing topics will help build the mindset and perspective of a VC, and then go into the operating topics to review a potential investment.</p>
COURSE GOAL	The goal is to provide a hands-on learning experience for students to be part of a venture capital team. The intent is to make VC accessible to students to help jump-start their careers in investing or entrepreneurship.
STUDENT ROLE	We are looking for hard-working, inquisitive, self-starters for this course. For you to spend the time reading, analyzing, and writing up the cases and conducting research, it is my responsibility to see that you get the most out of your efforts. I hope to create a classroom environment that is interesting and fun. Your participation in class is critical to accomplishing our goal. You should come prepared to discuss the assigned assignments.
CLASS OUTLINE	<ul style="list-style-type: none"> ● 1 hour learning / discussion ● 1 hour speaker ● 1 hour project

INSTRUCTOR ROLE
 We will abandon the traditional learning approach where the instructor lectures and you take notes. You will learn from experiential learning as well as from each other. My role as an instructor is to facilitate learning.

THESIS AREAS
 We will be working on Problem, Market, Technology Intersections:

Problem	Market	Technology
1. Environment and climate crisis - NYT Climate Crisis - UN Climate Crisis - NASA Climate Crisis and Global Warming	Environmental Monitoring, Human Health	Synthetic Biology, Sensors, Internet of Things, Edge Computing
2. Poor mental health and psychology, gender bias, racism, discrimination - Stanford Goalkeeper Suicide - Cancer Patients Are at High Risk of Depression and Suicide - Racism in Soccer - Naomi Osaka Brought to Tears by Heckler at Indian Wells - USWNT, Youth Sports - 'Isolated and alone': boy, 12, racially abused at football match in London	Education, sports, work, human health	Computer Vision, Artificial Intelligence, Machine Learning, Data science
3. Poor governance, non-transparency - Theranos - Insider Trading - College Admissions Scandal - Enron - US Gymnastics Nassar Abuse Survivors Reach a \$380 Million Settlement - US Safesport controversy - University Sexual Reporting	Startups, corporations, finance, non profit, government	Artificial Intelligence, Machine Learning, Data science

<p>4. Lack of access to education, equity, increased crime levels, widening of social inequality</p> <ul style="list-style-type: none"> - Unequal education, race and inequality - Costs of inequality 	Education, Crime	Artificial Intelligence, Machine Learning, Data science, w3
<p>5. Limits of classical computing and Moore's Law, Hacking</p> <ul style="list-style-type: none"> - We're not prepared for the end of Moore's Law - Toyota, Honda, General Motors, and Ford supplier confirmed a cyberattack - Samsung, hackers breached company data and source code for Galaxy smartphones 	Drug discovery, security, financial systems	Quantum computing software
<p>6. Congestion, inefficiency, concerns in transportation</p> <ul style="list-style-type: none"> - New Study Finds Traditional Freight Shipping is Inefficient and Costly, According to Shippers Across the US - 8K travelers experienced the Monday airport traffic jam, one visitor shared his experience - Why is traffic congestion getting worse? A decomposition of the contributors to growing congestion in San Francisco-Determining the Role of TNCs 	Transportation and logistics	Artificial Intelligence, Machine Learning, Sensor Fusion, Autonomy
<p>7. Disease</p> <ul style="list-style-type: none"> - Cancer is a leading cause of death worldwide. 	Irradicating disease	Drug Discovery, Synthetic Biology, Computational Biology

[accounting for nearly 10 million deaths in 2020, or nearly one in six deaths.](#)
 - [How does rheumatoid arthritis affect the lungs?](#)
 - [Is Parkinson's an autoimmune disease?](#)
[Study explores role of T cells](#)

OVERVIEW

Overall goal is to develop a **Problem, Market, and Technology Thesis White Paper** and identify several promising startups and make a decision to **invest in a startup** in a final **Investment Memo**.

During this time you will be evaluating the startup and VC landscape, posting interesting tweets, blog posts, and developing an ecosystem

We will work on the following projects:

1. Network 1 - Developing Supply (Investors)
 - Identify and Communicate with LPs
 - Sales funnel
2. Networking 2 - Developing Demand (Entrepreneurs)
 - Sourcing deals and interacting with founders
 - Funnel
3. Networking 3 - Developing Relationship with Collaborators
 - VCs
 - Accelerators
 - Strategies
 - Incubators
4. Developing a Problem, Market, Technology Thesis - Whitepaper
 - Problem
 - Market and Map
 - Technologies to solve problem and impact market
5. Syndicate construction
 - Ideal VCs and co-investors in the deal
6. Pitch and investment & develop Investment Memo
 - Problem evaluation
 - Market evaluation

	<ul style="list-style-type: none"> ○ Team evaluation ○ Technology evaluation ○ Financial evaluation
WEEKLY POSTING	<p>Each week you will post to LinkedIn and Twitter something interesting in investing, technology, markets, startup, really anything of interest. Please follow and tag https://www.linkedin.com/company/gen1capital and https://twitter.com/Gen1VC and we will discuss each week</p>
GRADING	<p>Your grade will be compiled from three different components:</p> <ul style="list-style-type: none"> ● Class Participation - 10% ● Team Participation - 10% ● Weekly Assignments - 20% ● Technology market - White Paper - 30% ● Investment Memo - 30% <p>Class and team participation will be graded based on quality versus quantity. I place high importance on comments that move the class discussion forward. Team member evaluations and class attendance will also be factored into your participation score. I will provide discussion questions that will serve as a basis for your analysis. You will write a short analysis based on one of these discussion questions that you choose to not exceed one page double spaced.</p> <p>Technology and Market White Paper Investment Memo</p>
GUEST SPEAKERS	<p>We have industry expert guest speakers to talk about Venture Capital investing. Students are expected to come to class having researched the firm and speaker, having at least 2-3 questions for a QA.</p> <ol style="list-style-type: none"> 1. Northern Trust - Trey Hart - Managing Director 2. \$52 Billion Boston-based Private University Endowment - David Kim, VP Operational Due Diligence 3. Northwestern University - Amy Falls - Chief Investment Officer 4. Eclipse Ventures - Kushagra Vaid - Partner 5. Bessemer Venture Partners - Charles Birnbaum - Partner 6. Digital Currency Group (DCG) Corporate Venture Capital - Rumi Morales - Director, Investments - Head of Venture and Growth Investing 7. Sequoia - Konstantine Buehler - Partner 8. Insight Partners - Scott Barclay - Partner 9. Recast Capital - Courtney McCrea, Managing Director 10. State of Illinois Treasurer - Joe Aguilar - Chief Investment Officer

	11. Khosla Ventures - Alex Morgan , Partner
COURSE PREREQUISITE	Insatiable desire to learn
FINAL THOUGHT	Keep in mind that there is no right or wrong answer to a case. I am much more interested in how you think through the case problems.

Main Deliverables Schedule

Main Deliverables	Weekly Deliverables (Subcomponents of Main)	Week	Due Date
Problem / Market / Technology Thesis Final Due 4/28	1. Overview - Problem, Market, Technologies Thesis	Week 2	7-Apr
	2. Technologies Detail, Hurdles, Adoption	Week 3	14-Apr
	3. Market map, Competitive Landscape	Week 4	21-Apr
	4. Startup Positioning and Presentation	Week 5	28-Apr
	5. Identify 1 startup	Week 5	28-Apr
Investment Memo Final Due 6/2	1. Summary	Week 5	28-Apr
	2. Team	Week 5	28-Apr
	3. Investment Thesis / Overview	Week 5	28-Apr
	4. Business Model	Week 6	5-May
	5. Technology / Product Roadmap	Week 6	5-May
	6. Financial Analysis, Cap Table	Week 7	12-May
	7. Competitors / Comparables	Week 8	19-May
	8. Recommendation	Week 9	26-May

Course Schedule

Week 1	Topic/Discussion	Details	Deliverables
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<p>April 1, 2022</p>	<p>Introduction to Venture Capital</p>	<p><u>Class Outline and Format</u></p> <p><u>What is Venture Capital</u>: Understanding risk and return; long duration with uncorrelated assets</p> <p><u>Defining success in venture capital</u>: The role of skill, team, market, deal making and luck</p> <p><u>Social impact of Responsible Capital</u>: Bringing risky but important developments to fruition, disruption of the status quo, historical examples of technology disruption, technology creating the world we want to live in</p>	<p>Submission- Use week 1 template</p> <p>Identify a problem that you are deeply passionate about in one of the following</p>
<p>Speaker: Northern Trust - Trey Hart, Managing Director - @ 11 am - 12 noon CDT</p>			

Week 2	Topic/Discussion	Details	Deliverables
<p>April 8, 2022</p>	<p>Mechanics of Venture Capital - Overview</p>	<p><u>Investor Types</u> : Angels, VCs (Financial, Corporate, Accelerators);</p> <p><u>Pathway to entering VC</u> : Angel, Entrepreneur, Investment Banking, Corporate, Independent wealth, scrapiness and luck</p> <p><u>Stages</u> : Pre-seed, Seed, A, B, Growth (C-X)</p> <p><u>Types of Vehicles</u> : Funds vs Sidecar; SAFE, Convertible Notes, Equity, Term Sheets, Alternative Vehicles (SPVs)</p> <p><u>Fund Formation</u> : Portfolio Construction, Capital Calls, Schedule of Investment, Co-investor Cohort</p> <p><u>Making Money in Venture Capital</u> : Carried Interest, Management Fee, Exit Opportunities; Pathways to Wealth Building</p> <p><u>Investing</u> : development of a technology thesis, developing a market thesis, financial return assessment and timeline, geography as a strategic attribute</p> <p><u>Non monetary value</u> : Access and equity, ESG, Community building</p>	<p>Submission- Use week 2 template</p> <p>Determine the scope of the related market: identify companies working to address the problem.</p> <p>-Market Map</p> <p>-Market Size</p> <p>Case Study: Day In the Life of a VC</p>

		<p><u>Working with Startups</u> : Identifying and aligning people, values and characteristics; Understanding yourself; Characteristics of good founding teams</p> <p><u>Investor Relations</u> : LPs, Communications, Collaboration, Distribution</p>	
<p>Speaker : \$52 Billion Boston-based Private University Endowment - David Kim, VP Operational Due Diligence - @ 10 am - 11 am CDT</p>			

Week 3	Topic/Discussion	Details	Deliverables
April 15, 2022	Developing a Thesis	<p><u>Internal Culture</u>: Assessing values important to GPs and investor cohort</p> <p><u>Problem Identification</u>:</p> <p>Health/Disease/Poverty; Resource Shortages in Global Markets; Lack of Access and Opportunity in Developing Markets; Problems created by poor governance</p> <p><u>Technology Solutions</u> :</p> <p>Robotics/Robotics as a Service; The Future of Manufacturing; The Role of Machine Learning; Energy Storage and Connectivity; Finance and Cryptocurrencies; Biological Sensing; The Future of Mobility</p>	<p>Submission- Use week 3 template</p> <p>Identify investors working in your space</p> <p>Case Study: Yale University</p>
<p>Speaker : Northwestern University - Amy Falls, Chief Investment Officer - 9 - 10 am CDT</p>			

Week 4	Topic/Discussion	Details	Deliverables
April 22, 2022	Working with Founders and Startups	<p><u>Identifying Alignment</u> : Understanding values, motivations, risk appetite and working characteristics in founders; Characteristics of good founding teams</p> <p><u>Role of the VC</u> : Facilitation, Communication, Self awareness; Networking and Outreach</p>	<p>Submission- Use week 4 template</p> <p>Case Study: Andreessen Horowitz's Cultural Leadership Fund</p>

Speaker : [Eclipse Ventures](#) - [Kushagra Vaid](#), Partner - @ 11 am - 12 noon CDT

Week 5	Topic/Discussion	Details	Deliverables
April 29, 2022	Financial & Market Analysis	<p><u>Financial Returns</u>: Valuation, Cap Table, Dilution, Pre-Money, Post-Money, Deal Structure, Carried Interest; Financial Projections/Modeling</p> <p><u>Business Model Assessment</u></p> <p><u>Startups</u> : Geometry of Startup Winning - Market maps, Wedges, Moats</p> <p><u>Macro Effects</u> : Tax Incentives; Regulations</p>	<p>Submission- Use week 5 template</p> <p>Case Study: Risk and Reward in VC</p>

Speaker : [Bessemer Venture Partners](#) - [Charles Birnbaum](#), Partner - @ 10 am - 11 am CDT

Week 6	Topic/Discussion	Details	Deliverables
May 6, 2022	Technical Due Diligence	<p><u>Frameworks for Technology Assessment</u>:</p> <p>Identifying stages of development; Novelty and Intellectual Property; Commercialization through Universities;</p> <p><u>Competitors and Comparables</u> : Industry Experts, Customer Interviews</p>	<p>Submission- Use week 6 template</p> <p>Case Study: Evaluate Investments</p>

Speaker : [Digital Currency Group \(DCG\)](#) Corporate Venture Capital - [Rumi Morales](#) - Head of Venture and Growth Investing @ 11 am - 12 noon CDT

Week 7	Topic/Discussion	Details	Deliverables
May 13, 2022	Financial Due Diligence	Market Size, Discount Cash Flow / Proforma, Return Matrix	<p>Submission- Use week 7 template</p> <p>No Case Study: Instead Discuss Startups Your Team is Interested In</p>

Speaker : Sequoia Capital - Konstantine Buhler , Partner - @ 11 am - 12 noon CDT			

Week 8	Topic/Discussion	Details	Deliverables
May 20, 2022	Making Investments	<u>Anatomy of the Term Sheet</u> : Deal Terms <u>Mechanics of VC</u> : Rounds of Financing - Seed to IPO; Agreements and Terms	Submission- Use week 8 template No Case Study: Instead Discuss Startups Your Team is Interested In
Speaker : Insight Partners - Scott Barclay , Partner - @ 11 am - 12 noon CDT			

Week 9	Topic/Discussion	Details	Deliverables
May 27, 2022	Governance & Ethical Dilemmas	<u>Regulations/Governance</u> : Identifying and mitigating regulatory hurdles; Startup boards <u>Ethical Dilemmas</u> : Lessons from Theranos as a Case Study	Submission- Use week 9 template Case Study: When Founders Go To Far
Speakers : <ul style="list-style-type: none"> • State of Illinois Treasurer - Joe Aguilar - Chief Investment Officer - @ 10 - 11 am CDT • Recast Capital - Courtney McCrea, Managing Director - @ 11 am - 12 noon CDT 			

Week 10	Topic/Discussion	Details	Deliverables
June 3, 2022	Getting Started in VC	Raising Money vs Investing your own Money; Building a Deck; Fund Formation	Submission- Use week 10 template
Speaker : Khosla Ventures - Alex Morgan, MD, PhD . Partner - @ 10:30 - 11:30 am CDT			

Course Assignments and Grading

If this section has a Grader, he will evaluate all assignments with Instructor oversight. Their decisions and scores will stand as final. At the end of the term, your instructor will determine your final grade. Your final grade will be posted through Caesar. During the course grades relevant to this course may be recorded in Canvas. However, grades listed in Canvas should not be relied upon as the sole or final factors in determining your final grade. Please be aware that the Northwestern University Student Handbook contains expectations for behavior and conduct in the Northwestern community and outlines the procedures to be followed when these expectations are not met. The policies presented in the Northwestern University Student Handbook, or any other applicable University policy, can override grading details presented in this syllabus. NOTE: Absence and/or violations of the university policies are grounds for failure in this course.

Course Policies

Integrity Code Policy All students are required to adhere to the Northwestern Integrity Code and academic integrity policies here. Academic dishonesty can result in penalties ranging from letters of warning to separation from the university. Instructors may give a failing grade in a course for academic dishonesty. All student work in this class may be analyzed electronically for violations of the University's academic integrity policy and may also be included in a database for the purpose of testing for plagiarized content.

Accessibility Policy

Northwestern University works to provide a learning environment for students with disabilities that affords equal access and reasonable accommodation. Any student requesting accommodations related to a disability or other condition are required to register with the AccessibleNU website (accessiblenu@northwestern.edu; 847-467-5530) and to provide professors with an accommodation notification from AccessibleNU, preferably within the first two weeks of class. All discussions will remain confidential. **Sexual Misconduct and Reporting Policy** Northwestern University is committed to fostering an environment where students are safe and free from sexual misconduct. Confidential resources are available to those who have experienced sexual misconduct. Faculty and instructors are not confidential resources and are required to report incidents of sexual misconduct, whether discussed in your assignments or in person, to the Title IX Coordinator, who can provide information about resources and options. I encourage students who have experienced sexual misconduct to talk with someone to get support. For more information, including how to request interim protective measures and academic accommodations or file a complaint, see the Get Help page. **Discrimination and Sexual Harassment Policy** Northwestern University's Policies on Discrimination, Harassment, and Sexual Harassment apply to all members of the University community, including students, staff, and faculty. Any student, staff, or faculty member who believes that he or she has been discriminated against or harassed on the basis of his or her race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, parental status, marital status, age, disability, citizenship, veteran status, genetic information or any other classification protected by

law, should contact the Office of Equal Opportunity and Access at (847) 491-7458 or the Sexual Harassment Prevention Office at (847) 467-6571. Additional information about the University's discrimination and harassment policies, including the campus resources available to assist individuals with discrimination or harassment concerns, is available online on the Human Resources Equal Opportunity and Access website.

Personal Electronics Policy

To maximize engagement and learning, all laptops, tablets and smartphones are not allowed to be used during lectures and class discussions unless explicitly permitted by the instructor. However, students are strongly encouraged to have electronic tools on hand for team workshop sessions. Recording, photography or other electronic capture of any portion of this class for any use is not allowed.

Use of Canvas Policy

This Canvas site has been established and will be used extensively for class communication as well as sharing articles, relevant websites, scheduling, and other class details. All Assignments are due on your individual Section site. All class assignments for grades need to be submitted on time by the deadline in the appropriately labeled Grade Center column with the name(s) of the student(s) as it appears in Caesar clearly displayed in the upper left-hand corner of each page.

Library Research & Resource Policy

The University Library makes available excellent research, datasets, reports and studies. The complete list of business resources "A to Z" is here. University Librarians are always willing to meet with you in person by appointment.

Professionalism Policy

In this course, professionalism refers to regular class attendance, contributing positively and significantly to class discussions, and being respectful of both your fellow classmates and the Instructor. Discussion is an important part of the learning process to allow the students to synthesize "the big picture" of marketing. Participating in class discussions is expected and part of your grade. Professionalism, therefore, is a valuable part of the learning process for all students and is a factor in grade determination. Unprofessional behavior (lateness, chatting, leaving class, texting, inappropriate use of electronic devices, etc.) will have a direct negative impact on your grade. (See "Grading" above). Please inform the instructor if you will be missing class. If you plan to miss 2 or more classes, it is bound to affect your participation grade.

The instructor reserves the right to make changes to this syllabus. Students are responsible for being aware of any changes announced in class or on Canvas.