

# Applications in Entrepreneurial Finance: Fintech

## SYLLABUS

Professor: **Sabrina Howell**

Office: KMC 9-93

Office hours: Tuesday, 3-5 pm and Friday, 8-9 am (virtual sign-up sheet for 15 min slots)

Email: [showell@stern.nyu.edu](mailto:showell@stern.nyu.edu)

FINC-UB.62.001 (Section 1): Mon-Wed 2-3:15 pm

Location: Meeting ID: 963 7313 6838, Passcode: 843613 (passcode required)

<https://nyu.zoom.us/j/96373136838?pwd=cWRRQS9ZcGhhVWRITWJDd3V4RDEwdz09>

Zoom monitor: Erin Choi ([eyc321@nyu.edu](mailto:eyc321@nyu.edu))

In-Person Meetings: We will have 3 optional gatherings to get to know each other and ask questions about course material (outside in the Sasaki Garden in Washington Square Village, masked, and distanced). Schedule TBD.

FINC-UB.62.002 (Section 2): Mon-Wed 3:30-4:45 pm

Location: Meeting ID: 919 4139 6462, Passcode: 013317 (passcode required)

<https://nyu.zoom.us/j/91941396462?pwd=bmtWY0JWc0E2M1BaK0RMelFranROUT09>

Zoom monitor: Rodrigo (Ro) Camara Rowe ([rcr371@nyu.edu](mailto:rcr371@nyu.edu))

In-Person Meetings: We will have 3 optional gatherings to get to know each other and ask questions about course material (outside in the Sasaki Garden in Washington Square Village, masked, and distanced). Schedule TBD.

Teaching Assistants: Fareen Pasaya ([fsp234@stern.nyu.edu](mailto:fsp234@stern.nyu.edu))

Sonal Sharma ([sonal.sharma@nyu.edu](mailto:sonal.sharma@nyu.edu))

Note: After each lecture, a link to the recording will be posted on Classes.

This course has two objectives: (1) introduce the key technologies, business models, and companies of the startup fintech landscape; and (2) introduce you to the financing lifecycle of high-growth new ventures (startups).

This class is very applied and is intended for students who are potentially interested in working at, founding, or investing in early-stage startups in the fintech sector. Guest speakers will shed light on what is happening “on the ground” from both the VC and the entrepreneur perspectives. We will roughly follow a successful startup’s path from founding through the stages of new

venture finance. These include the “VC method” of valuation, the venture capital industry, and finally how entrepreneurs and investors realize returns. Entrepreneurial finance is all about making decisions in situations of substantial uncertainty, requiring a careful balance of qualitative and quantitative approaches.

At the same time, we will examine the key components of the evolving fintech sector, including new instruments for financing early-stage enterprises, such as initial coin offerings and equity crowdfunding. While “financial technology” has been around since King Alyattes of Lydia minted the first coin around 600 BC, fintech today refers to the application of information technology to finance. It has become an important new sector for high-growth startups.

In this class, we will consider the following subsectors, where startups are either seeking to displace incumbents or sell them their services: Bitcoin/Ethereum (and ICOs); personal finance; equity crowdfunding; lending; payments; insurance; and remittances. Blockchain, peer-to-peer platforms, and artificial intelligence (e.g. machine learning) are key technologies underlying many of the new business models. This semester, greater weight will be placed on blockchain and fintech in small business lending than on other topics.

We will use a mixture of lectures, guest speakers, and hands-on simulation. The scheduled outside speakers are a mix of entrepreneurs and investors. Please note that scheduling conflicts arise often for these busy individuals. We should expect some of the speakers to reschedule or cancel.

Due to the inherently ambiguous nature of the subject matter, this course will be much less mathematical than most finance courses.

Your grade will also depend on class participation. If you are uncomfortable with qualitative or non-formulaic approaches to problems, or you prefer never to speak in class, then this course is not for you. However, you may submit questions or comments about the reading by email before class, and this will count towards your class participation grade IF you attend class that day. The email should be sent at least four hours before class begins and must have “Question for Class” as the subject line. I encourage you to ask the question you emailed during class.

In groups, you will develop a fintech startup business model. You will write a financial/fundraising plan in the middle of the semester and pitch the startup to guest judges at the end of the course. You can come up with your own idea or take on an existing idea from one of our guest speaker companies or any startup you find interesting. You are encouraged to try to build a mock-up website or product, though this is optional.

You are responsible for:

- A) Attending and participating in class.
- B) Identifying thoughts or questions about assigned reading to bring up in class.
- C) Studying lecture materials for the midterm.
- D) Preparing your startup deliverables in your groups.

Grading is as follows:

- A) Midterm Exam (30%)

- B) Class participation/attendance (including pre-class submitted questions and debate participation) (40%)
- C) Startup financial plan and pitch (30%)

The midterm will be take-home and open book, with a focus on seeing if you can reformulate the ideas from class in your own words. To receive credit, you will have to complete it within the normal class period time on the midterm date identified below. If you must miss this class due to a personal emergency, you will take an entirely different test on a different date. You will need to provide both a signed PDF note via email and contact information for a doctor, family member, or member of the Stern administration to confirm the need for your absence.

The required reading listed under each session must be completed *before* that session. Readings range from academic research papers to magazine articles and blogs. **You will need to buy Mills, Karen G. *Fintech, Small Business & the American Dream: How Technology Is Transforming Lending and Shaping a New Era of Small Business Opportunity*. Springer, 2019.** This is at the NYU bookstore under this course.

Especially if you are particularly interested in the entrepreneurial finance aspect of this course, you may also consider buying Da Rin, Marco and Thomas Hellman. *Fundamentals of Entrepreneurial Finance*. Oxford, 2020.

## CLASS SCHEDULE

1. Monday, February 1
  - a. Topic: Introduction; Overview of the fintech landscape
2. Wednesday, February 3
  - a. Topic: Equity crowdfunding
  - b. Required Reading: Introduction section of Catalini, Christian and Xiang Hui. "Online Syndicates and Startup Investment." NBER Working Paper, 2018.
  - c. Supplementary Reading: Chapter 2 "Evaluating Venture Opportunities" in Da Rin, Marco and Thomas Hellman. *Fundamentals of Entrepreneurial Finance*. Oxford, 2020.
3. Monday, February 8
  - a. Topic: Small business lending and fintech in the PPP program
  - b. Required reading: Chapters 2-5 (p. 13-64) of Mills, Karen G. *Fintech, Small Business & the American Dream: How Technology Is Transforming Lending and Shaping a New Era of Small Business Opportunity*. Springer, 2019.
  - c. Required reading: Howell, Sabrina T., Theresa Kuchler, and Johannes Stroebe. "Which lenders had the highest minority share among their Payment Protection Program (PPP) loans?" 2020.
  - d. Startup project discussion (must form groups by Feb 17)
4. Wednesday, February 10

- a. Topic: Small business lending and fintech in the PPP program
- b. Required reading: Chapters 7, 10, 11 (p. 83-94, 121-149) of Mills, Karen G. *Fintech, Small Business & the American Dream: How Technology Is Transforming Lending and Shaping a New Era of Small Business Opportunity*. Springer, 2019.

*No Class on February 15 (President's Day)*

5. Wednesday, February 17
  - a. Topic: Kabbage in small business lending and fintech in the PPP program
  - b. Reading: Stulz, Rene. "Fintech, BigTech, and the Financial System." *Journal of Applied Corporate Finance*, 2019.
6. Thursday, February 18 (CLASSES MEET ON MONDAY SCHEDULE)
  - a. Topic: VC valuation
  - b. Required Reading: "Neighborly readings" (Word) plus two PDF Bloomberg articles ("Bloomberg Neighborly...")
7. Monday, February 22
  - a. Topic: Bitcoin & blockchains
  - b. Required Reading (try! Not tested): Nakamoto, Satoshi. "Bitcoin: A Peer-to-Peer Electronic Cash System." 2008.
  - c. Required Watching: Bitcoin Explained video (link in readings folder)
8. Wednesday, February 24
  - a. Topic: Blockchain infrastructure and stablecoins
9. Monday, March 1
  - a. Topic: Blockchain applications
  - b. Supplementary Reading: Chapter 3 "The Financial Plan" in Da Rin, Marco and Thomas Hellman. *Fundamentals of Entrepreneurial Finance*. Oxford, 2020.
  - c. Discussion of financial plan for startup project requirements
10. Wednesday, March 3
  - a. Topic: VC valuation
  - b. Required Reading: "Kabbage readings"
11. Monday, March 8
  - a. Term sheets
12. Wednesday, March 10
  - a. Topic: Data science behind fintech
13. Monday, March 15
  - a. Topic: Term sheets

14. Wednesday, March 17
  - a. Topic: VC securities
15. Monday, March 22
  - a. Possible guest
  - b. Topics: VC partnerships, discount rates, roboadvising
16. Wednesday, March 24
  - a. Midterm
17. Monday, March 29
  - a. Topic: VC partnerships and VC as an asset class
18. Wednesday, March 31
  - a. Startup project group discussions (in breakout rooms, you will briefly explain your idea, and receive feedback from peers)
19. Monday, April 5
  - a. Topic: The small conventional VC fund model of 10-20 investments per fund
  - b. Startup Project Fundraising Plans due
20. Wednesday, April 7
  - a. Topic: The diversified direct-investment model (500 investments)
  - b. Required Reading: Othman, Abraham. "Startup Growth and Venture Returns." *AngelList* (academic working paper). December 2019.
21. Monday, April 12
  - a. Topic: Class Debate – conventional VC fund model (10-20 investments per fund) or diversified direct-investment model (500 investments)
    - i. All students will need to have prepared arguments in groups of 4-5 (will be randomly assigned)
    - ii. Winning group (based on Professor's assessment) will automatically get a top participation score in course
  - b. Required reading: Hassan et al. "The Pervasive, Head-Scratching, Risk-Exploding Problem With Venture Capital." *Institutional Investor*, September 29, 2020
22. Wednesday, April 14
  - a. Topic: Fintech in mortgages
  - b. Required Reading: Introduction to Fuster, Andreas et al. "The Role of Technology in Mortgage Lending." *The Review of Financial Studies*. 2019.

*No class on Monday, April 19*

23. Wednesday, April 21
  - a. Topic: Payments, remittances & financial inclusion

- b. Required Reading: Garz, Seth, Xavier Giné, Dean Karlan, Rafe Mazer, Caitlin Sanford, and Jonathan Zinman. "Consumer protection for financial inclusion in low and middle income countries: Bridging regulator and academic perspectives." Global Poverty Research Lab Working Paper 20-110 (2020)

24. Monday, April 26

- a. Topic: VC perspective on Fintech investing

25. Wednesday, April 28

- a. Topic: IPO Process

26. Monday, May 3

- a. Topic: Initial Coin Offerings
- b. Required Reading: Howell, Sabrina T., Marina Niessner, and David Yermack. "Initial coin offerings: Financing growth with cryptocurrency token sales." *The Review of Financial Studies* 33, no. 9 (2020): 3925-397
- c. Required Reading: Waters, Richard. "What did Silicon Valley's crypto bubble create?" *The Financial Times*, December 30, 2020.

27. Wednesday, May 5

- a. Topic: Startup Project pitches

28. Monday, May 10

- a. Topic: Startup Project pitches

## FURTHER READING

(Note: I have these in my office – ask me if you'd like to borrow one)

1. Feld, Brad and Jason Mendelson. (2011). *Venture Deals*. Wiley & Sons.
2. Damodaran, A. (2009). *The dark side of valuation: Valuing young, distressed, and complex businesses*. Ft Press.
3. Smith, J., Smith, R. L., Smith, R., & Bliss, R. (2011). *Entrepreneurial finance: strategy, valuation, and deal structure*. Stanford University Press.
4. Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Random House LLC.
5. Metrick, A. and A. Yasuda. (2010). *Venture Capital and the Finance of Innovation*. Wiley.
6. Meyer, M. H., & Crane, F. G. (2010). *Entrepreneurship: An innovator's guide to startups and corporate ventures*. SAGE Publications.
7. Ralston, Geoff. 2015. "A Guide to Seed Fundraising." Online book, <http://www.themacro.com/articles/2016/01/how-to-raise-a-seed-round/>

8. Lerner, Josh, Ann Leamon, and Felda Hardymon. *Venture Capital, Private Equity, and the Financing of Entrepreneurship*. New York: John Wiley & Sons, 2012.
9. Diedrich, Henning. *Ethereum*. Wildfire publishing, 2016.
10. Skinner, Chris. *Digital Bank: Strategies to Launch or Become a Digital Bank*. Marshall Cavendish, 2014.
11. Antonopoulos, Andreas M. *Mastering Bitcoin: unlocking digital cryptocurrencies*. O'Reilly Media, 2014.
12. Haycock, James. *Bye Bye Banks?: How Retail Banks are Being Displaced, Diminished and Disintermediated by Tech Startups and What They Can Do to Survive*.
13. Tapscott, Don. *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World*. Portfolio, 2016.
14. McMillan, Jonathan. *The End of Banking: Money, Credit, and the Digital Revolution*. Zero/One Economics, 2014.
15. Mougayar, William. *The Business Blockchain*. Wiley, 2016.
16. Sironi, Paolo. *FinTech Innovation: From Robo-Advisors to Goal Based Investing and Gamification (The Wiley Finance Series)*, Wiley, 2016.
17. King, Michael R. and Richard W. Nesbitt (eds). *The Technological Revolution in Financial Services: How Banks, FinTechs, and Customers Win Together*. University of Toronto Press, 2020.
18. Hsu, Sara and Jianjun Li. *China's Fintech Explosion: Disruption, Innovation, and Survival*. Columbia Business School Publishing, 2020.

## STERN POLICIES WE WILL FOLLOW

### ACADEMIC INTEGRITY

Our undergraduate [Academics Pillar](#) states that ***we take pride in our well-rounded education and approach our academics with honesty and integrity***. Indeed, integrity is critical to all that we do here at NYU Stern. As members of our community, all students agree to abide by the NYU Stern Student Code of Conduct, which includes a commitment to:

- Exercise integrity in all aspects of one's academic work including, but not limited to, the preparation and completion of exams, papers and all other course requirements by not engaging in any method or means that provides an unfair advantage.
- Clearly acknowledge the work and efforts of others when submitting written work as one's own. Ideas, data, direct quotations (which should be designated with quotation marks), paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.
- Refrain from behaving in ways that knowingly support, assist, or in any way attempt to enable another person to engage in any violation of the Code of Conduct. Our support also includes reporting any observed violations of this Code of Conduct or other School and University policies that are deemed to adversely affect the NYU Stern community.

The entire Stern Student Code of Conduct applies to all students enrolled in Stern courses and can be found here: [www.stern.nyu.edu/uc/codeofconduct](http://www.stern.nyu.edu/uc/codeofconduct)

To help ensure the integrity of our learning community, prose assignments you submit to NYU Classes will be submitted to Turnitin. Turnitin will compare your submission to a database of prior submissions to Turnitin, current and archived Web pages, periodicals, journals, and publications. Additionally, your document will become part of the Turnitin database.

## **GENERAL CONDUCT & BEHAVIOR**

Students are also expected to maintain and abide by the highest standards of professional conduct and behavior. Please familiarize yourself with Stern's Policy in Regard to In-Class Behavior & Expectations (<http://www.stern.nyu.edu/portal-partners/current-students/undergraduate/resources-policies/academic-policies/index.htm>) and the NYU Student Conduct Policy (<https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-student-conduct-policy.html>).

## **GRADING GUIDELINES**

### **Grading Information for Stern Elective Courses**

At NYU Stern, we strive to create courses that challenge students intellectually and that meet the Stern standards of academic excellence. To ensure fairness and clarity of grading, the Stern faculty have agreed that for elective courses the individual instructor or department is responsible for determining reasonable grading guidelines.

## **STUDENT ACCESSIBILITY**

If you will require academic accommodation of any kind during this course, you must notify me at the beginning of the course and provide a letter from the Moses Center for Student Accessibility ([212-998-4980](tel:212-998-4980), [mosescsa@nyu.edu](mailto:mosescsa@nyu.edu)) verifying your registration and outlining the accommodations they recommend. If you will need to take an exam at the Moses Center for Student Accessibility, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation. For more information, visit the CSA website: <https://www.nyu.edu/students/communities-and-groups/student-accessibility.html>

## **STUDENT WELLNESS**

Classes can get stressful. I encourage you to reach out if you need help. The NYU Wellness Exchange offers mental health support. You can reach them 24/7 at [212 443 9999](tel:212-443-9999), or via the "NYU Wellness Exchange" app. There are also drop in hours and appointments. Find out more at <http://www.nyu.edu/students/health-and-wellness/counseling-services.html>