

## McCOMBS SCHOOL OF BUSINESS

# FIN 294 - FINANCIAL TECHNOLOGY

SPRING 2019

M/W 08:00AM – 10:00AM, RRH 4.314 MBA

M/W 10:00AM – 12:00PM, RRH 3.406 MSF/MSBA

<b>Professor</b>	Cesare Fracassi
<b>Office</b>	GSB 5.165
<b>Office Hours</b>	Mondays 12.30-2pm – RRH.
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<b>Course Web Page</b>	via Canvas
<b>Teaching Assistants</b>	Erica Xuwei Jiang ( <a href="mailto:Xuwei.Jiang@mcombs.utexas.edu">Xuwei.Jiang@mcombs.utexas.edu</a> )

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### Course Objectives

The course provides an overview of the most recent technological advances that are radically changing the financial services industry. Technological breakthroughs offer new ways for people to save, invest, borrow, and transact. We will analyze how new technologies create value in the financial industry, from reducing unit cost, increasing transparency, increasing competition, creating network effects, leveraging economies of scales, and lowering asymmetric information. We will also study the competitive landscape and the market opportunities and threats for incumbents and new entrants.

The course is divided into 4 modules. Module 1 will provide an overview of the FinTech industry; Module 2 will focus on distributed ledgers, blockchains, and cryptocurrencies; Module 3 will analyze application of artificial intelligence and machine learning to the finance industry, from credit scoring models in marketplace lending and crowdfunding, to algorithmic trading and robo-advising; Finally, module 4 will concentrate on internet of things, with a focus on insurance and electronic payments, including domestic mobile payments and international remittances.

Students will also have the opportunity to meet with guest speakers. These meetings will occur outside the regular scheduled class time, and thus will be optional. The students will learn greatly from interacting with experts and influential leaders in the Fintech space.

### Course Requirements

The course will use statistical tools, but programming skills are not required. Throughout the course, we will be using R to handle and analyze data. Students will be given the opportunity to acquire basic R skills from online tools, supplied materials, and optional review sessions.

## Schedule

FIN 294 - Financial Technology - Spring 2018				
	Date	Module	Topic	Assignments Due
1	Wed 01/17	Fintech Overview	The Past, Present, and Future of Technology and Finance	
2	Fri 01/19		Fintech Space Overview	HW #1 - Fintech Overview
3	Mon 01/22	Distributed Ledgers and Cryptocurrencies	Cryptography and Encryption Algorithms	
4	Wed 01/24		Distributed Ledgers and Blockchain 1	HW #2 - Cryptography
5	Mon 01/29		Distributed Ledgers and Blockchain 2	
6	Wed 01/31		Cryptocurrencies, Blockchain Applications and Use Cases	HW #3 - Deutsche Bank
7	Mon 02/05		Funding Blockchain Ventures and Equity Crowdfunding	
8	Wed 02/07	Machine Learning and Finance	Marketplace Lending and Intro to Machine Learning	HW #4 - Lending.
9	Mon 02/12		Intermediate Machine Learning and Credit Modeling	
10	Wed 02/14		Robo-Advising	HW #5 - Robo-Advising
11	Mon 02/19		Algorithmic Trading	HW #6 - Quants in Utopia
12	Wed 02/21	Internet of Things	Insurance	
13	Mon 02/26		Mobile Payments	HW #7 - Stripe
14	Wed 02/28		International Remittances	
	Thu 03/1	Final Exam		

## Materials

Required HBS Case material (available online): In order to purchase the cases, the students need to access the Harvard Business Publishing website at <http://cb.hbsp.harvard.edu/cbmp/access/72162023> and click the Purchase Course button. Purchasing the course-pack gives you a discount relative to buying the cases individually. Since these are group assignments, you can buy one case per group if you want. There you can also download the supplemental excel spreadsheets.

There will be also required readings assigned in preparation for each class. The readings will be available for download on Canvas. I will also hand out the printout of the slides at the beginning of each class.

## Assignments and Grading

The cases are group assignments. Please form groups of two to three people maximum. The average turn-around time for returning the graded cases back to students is one week. The students have a week after the assignments are returned to ask questions about the grading and ask for a re-grade. After that, the grade is final, and cannot be changed.

The final examination will be administered on Thursday March 1<sup>st</sup>. The final exam is cumulative and covers all material mentioned in the course. Please note the scheduling of the exam. You are responsible for ensuring that you are available and on campus to take the exam. I will not FAX exams to remote locations. I will not permit anyone to take the exams at another time unless you are gravely ill, face a significant emergency or have an exam conflict. If your travel plans conflict with the date of an exam, you should change your travel plans now, or drop the course. Please advise potential employers that you cannot schedule interviews that conflict with your exam schedule.

Your course letter will be determined as follows:

	Points
In-Class Contribution	10
Homework Assignments	50
Final Exam	<u>40</u>
	<u>100</u>

The MBA Programs Committee approved the following target grade distribution for all Core and Flex Core courses: A (4.0) 25%, A- (3.67) 20%, B+ (3.33) 15%, B (3.0) 35%, B- or below (2.67) 5%. This course uses that target distribution as a guideline for establishing final grades. C's, D's and F's will be awarded where deserved. Natural breaks in the distribution will be used to determine the final grade distribution. No student is allowed to take the course on a pass/fail basis.

Make-up and extra-credit assignments are generally not possible. Your grade will be determined solely by the components listed above.

## Discussion Board

I invite students to post these questions on the discussion board available on Canvas. My TAs and I will also join the forum as active participants and moderators. This discussion forum is the primary mode of communication for addressing finance topics outside the classroom. My TAs and I will only answer emails regarding questions or concerns about grades, attendance and other individual matters.

## McCombs Classroom Professionalism Policy

The highest professional standards are expected of all members of the McCombs community. The collective class reputation and the value of the Texas MBA experience hinges on this. Faculty are expected to be professional and prepared to deliver value for each and every class session. Students are expected to be professional in all respects. I expect the students to agree on the following set of common classroom policies:

- **The use of electronic devices is not allowed at any time unless explicitly directed at the discretion of the professor.** While technology and analytics will be discussed and used extensively during the course, I believe that screens can also be a great source of distraction. When students are surfing the web, responding to e-mails, instant messaging each other, and otherwise not devoting their full attention to the topic at hand, they are doing themselves and their peers a major disservice. Those around them face additional distraction. Fellow students cannot benefit from the insights of the students who are not engaged.
- **Class Attendance is required.** If you miss three or more classes (i.e. more than 20% of the total number of lectures) for non-religious or health related issues, you will fail the class, and you will be asked to retake the course at a time that is more convenient for you. The education experience for everyone suffers if participation or attendance for the class becomes a problem. If you must miss a class, an examination, a work assignment, or a project, in order to observe religious holidays, you will be given an opportunity to complete the missed work within a reasonable timeframe after the absence.
- **Students are required to arrive on time.** If a student knows of any scheduling conflict, he/she will notify the class in advance by email. On time arrival ensures that classes are able to start and finish at the scheduled time. On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.
- **Students are required to display their name cards.** This permits fellow students and faculty to learn names, enhancing opportunities for community building and evaluation of in-class contributions.
- **Turning in your assignment up to a week late for other than health, significant personal, or religious reasons will reduce your grade by 30%.** Assignments cannot be turned in more than a week late. Individual extension of assignment deadlines could negatively alter the level-playing field within the classroom.

Remember, you are competing for the best faculty McCombs has to offer. Your professionalism and activity in class contributes to your success in attracting the best faculty to this program.

## Students with Disabilities

Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. Services for Students with Disabilities (SSD) is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online at <http://deanofstudents.utexas.edu/ssd/index.php>. Please do not hesitate to contact SSD at (512) 471-6259, VP: (512) 232-2937 or via e-mail if you have any questions.

## Academic Dishonesty

I have no tolerance for acts of academic dishonesty. Such acts damage the reputation of the school and the degree and demean the honest efforts of the majority of students. The minimum penalty for an act of academic dishonesty will be a zero for that assignment or exam.

The responsibilities for both students and faculty with regard to the Honor System can be found at <http://www.engr.utexas.edu/undergraduate/forms/462-university-of-texas-honor-code>. As the instructor for this course, I agree to observe all the faculty responsibilities described therein. As a Texas student, you agree to observe all of the student responsibilities of the Honor Code. If the application of the Honor System to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification.

As specific guidance for this course, you should consider the *writing* of all examinations to be an individual effort. Group *preparation* for examinations is acceptable and encouraged. Individual assignments are to be turned in individually but I encourage you to work together in answering the questions. You should, however, develop your own answer and not cut and paste the work of others.

A fundamental principle for any educational institution, academic integrity is highly valued and seriously regarded at The University of Texas at Austin, as emphasized in the standards of conduct. More specifically, you and other students are expected to "maintain absolute integrity and a high standard of individual honor in scholastic work" undertaken at the University (Sec. 11-801, *Institutional Rules on Student Services and Activities*). This is a very basic expectation that is further reinforced by the University's Honor Code. If in doubt, please ask me, or consult the honor code.