

# FINANCIAL TECHNOLOGY

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| <b>Professor</b>           | Cesare Fracassi  |
| <b>Office</b>              | GSB 5.165  |
| <b>Office Hours</b>        | By appointment.  |
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| <b>Course Web Page</b>     | via Canvas   |
| <b>Teaching Assistants</b> | Lin.Yang@mcombs.utexas.edu   |
| <b>Final Exam</b>          | March 5th, 6-9pm   |

## Course Objectives

The course provides an overview of the most recent technological advances that are radically changing the financial services industry. These 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 5 sections. Section 1 will provide an overview of the FinTech industry; Section 2 will focus on distributed ledgers, blockchains, and cryptocurrencies; Section 3 will analyze application of artificial intelligence and machine learning to the finance industry, from credit scoring models in marketplace lending and equity crowdfunding, to algorithmic trading and robo-advising; Section 4 will concentrate on internet of things, with a focus on insurance and electronic payments, including domestic mobile payments, open banking, and international remittances. Finally, section 5 will conclude with an exploration of the future of fintech.

## Course Requirements

**DELIVERY:** The course is delivered completely online synchronously AND asynchronously using the flipped class approach. The students will watch videos, go through reading material, and take quizzes before class, and then we will discuss the topic together. The course meets online through Canvas. The course material is organized by topic ("Modules"), and each module includes reading assignments, lecture and guest-speaker videos, a segment keyed to recent events in fintech, and a variety of

assignments. This design allows students to partly complete the work according to their own schedule –as long as the due dates for completion of each module lesson are met. Students are encouraged to visit <http://www.laits.utexas.edu/tower/tech.html> ([Links to an external site.](#)) to test their computer and network connection. It is your responsibility to ensure that you have a secure and reliable internet connection and are using a device that can access the course lectures, materials, and exams.

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

**COMMUNICATION:** Our main mode of communication will be Slack. Outside of the video lectures, any student communication initiated by instructors and teaching assistants will be conducted via Slack, and important messages will also be broadcasted through the canvas Announcements page on our course website. Please make sure to enable notifications in your Slack app. Do not assume that instructors will receive communication submitted via Canvas messaging or Canvas comments. We will also use Github to upload assignments.

**MATERIALS:** We will be using HBS Case material that you will purchase using [this link \(Links to an external site.\)](#). The rest of the reading material will be available on canvas.

**ATTENDANCE:** Attendance is required. If you miss four or more classes 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.

**ONLINE ETIQUETTE:** To maximize class engagement, cameras should be on at all times. If the student has technical difficulties, s/he should email the professor to let them know about the issue, and a timeframe to fix it.

## **Schedule, Units Due, and Assignments Due**

The flipped class method requires that the students watch the videos and take the quizzes in advance before the beginning of the class, according to the schedule below.

## **Assignments and Grading**

Some assignments and quizzes are individual, and some are group-based. We will use Github to submit assignments. The average turn-around time for returning the graded

cases back to students is two week. Quizzes and assignments cannot be taken after the beginning of the class when they are due. Individual extension of assignment deadlines could negatively alter the level-playing field within the classroom. The final exam is cumulative and covers all material mentioned in the course.

I use the following grade distribution as a guideline for establishing final grades: A (4.0) 25%, A- (3.67) 20%, B+ (3.33) 15%, B (3.0) 35%, B- or below (2.67) 5%. 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 unless approved by the professor. Make-up and extra-credit assignments are generally not possible. Your grade will be determined solely by the components listed above.

## 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 \(Links to an external site.\)](#). [Information on how to register \(Links to an external site.\)](#), [downloadable forms \(Links to an external site.\)](#), including [guidelines for documentation \(Links to an external site.\)](#), 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 \(Links to an external site.\)](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 individual assignments 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 \(Links to an external site.\)](#), *Institutional Rules on Student Services and Activities*). This is a very basic expectation that is further reinforced by the University's [Honor Code \(Links to an external site.\)](#). If in doubt, please ask me, or consult the honor code.

## **Campus Carry Law S.B. 11**

I cannot believe I have to state this, but if for whatever reason you come to my office, you are not allowed under any circumstance to carry a concealed firearm.