



ITP-499 “FinTech Fundamentals”

Units: 4

Term Fall 2020

M/W 2:00 to 3:50PM

Location: TBD

Instructor: Timothy Li

Office: TBD

Office Hours:

TBD

Contact Info:

ttli@usc.edu

Teaching Assistant: TBD

Office: TBD

Office Hours:

TBD

Contact Info:

TBD

IT Help: Viterbi IT

Hours of Service:

Monday – Friday, 8:30 a.m. – 5:00 p.m.

Contact Info:

DRB 205

(213) 740-0517

engrhelp@usc.edu

Course Description

FinTech Fundamentals explores the impacts of Financial Technology in our day to day lives from the invention of the Automated Teller Machines (ATMs) of the 1970s to leveraging biometrics and artificial intelligence to what makes instantaneous payments possible. Students will learn the technology behind payments, loans, trading and asset management as well as applications of machine learning and blockchain technology for finance and transactions.

Learning Objectives

Students will obtain theoretical knowledge and gain hands-on experience in the following topics:

1. Variety of FinTech applications:
 - a. Credit and Lending
 - b. Investment and Savings
 - c. Insurance and Shared Risk
 - d. Trading and Securities
2. Traditional banking technologies:
 - a. Banking Accounts
 - b. Automated Teller Machines
 - c. Payment Rails (Cash, Plastic, Wallets)
3. FinTech Analytics
 - a. Credit Scoring and A.I. Implementations
 - b. Fraud Detection
 - c. Risk Based Pricing Algorithms
4. FinTech Infrastructure
 - a. Data and Credit Bureaus
 - b. FinTech Ecosystem Tools
 - c. Open Banking Technologies
 - d. Blockchain Technologies / Smart Contracts
 - e. Cryptocurrency
5. FinTech Around The World
 - a. Asia
 - b. Middle East
 - c. South America
 - d. Europe
 - e. Southeast Asia / Australia
 - f. Africa

Prerequisite(s): none

Co-Requisite(s): none

Concurrent Enrollment: none

Recommended Preparation: none

Course Notes

This course will be graded based on a letter grade basis. Copies of lecture slides and other class information will be posted on Blackboard.

Technological Proficiency and Hardware/Software Required

Students should have a working knowledge on presentation software as well as basic website development experience. Coding experience (web or app development) is a plus, but not necessary. Software required for the course will be provided to students through free of charge download or through a virtual desktop environment.

Required Readings and Supplementary Materials

Instructor will assign regular outside reading material on latest developments in FinTech ecosystem and we will either leverage in class discussion or presentation to digest these topics.

Description and Assessment of Assignments

Students are expected to present on a weekly basis on each topic of discussion.. There will also be homework assignment based on specific research topics within FinTech topics in the forms or essays or presentations which will be presented in front of their peers in class.

Grading Breakdown

	% of grade
Homework	25
Participation	10
Weekly Presentations	25
Final Presentation	15
Final Exam	25
TOTAL	100

Presentations

On a weekly basis, students are required to produce individual or group presentation on topics discussed in the prior week. Presentations are 5-7 minutes each with peer review and Q and A following each presentation.

Final Presentation

Final Presentation will be delivered by individual or as group (4-6 students) on a specific FinTech topic. The presentation will consist of:

- History of the specific FinTech topic (e.g. ATM Machines, Blockchain Technology)
- Usage, adoption and evolution of the technology
- Social and economic impact of the technology
- Regulatory and/or legal concerns of the technology
- Profile a company that utilizes this technology and its commercial applications
- A proposal on how to improve upon this technology

Final Presentation Grading

The following point-structure will be used in determining the grade for the final presentation. Final presentation will be based upon the total points received, the highest total in the class, and the average of the class. Students will work on each of these deliverables in a team based or individual setting.

Deliverables Points

Historical research and invention of the technology - 20

Current Usage, adoption and key usage models of the technology - 20

Social and economic impact of the technology - 20

Regulations and legal concerns around the technology and its implementation - 20

An in depth profile of a company that invented or popularized the technology – 10

You or your team's proposal on how to evolve this technology for social or business impact - 10

Total - 100

Assignment Submission Policy

It is the responsibility of the student to make sure case studies and assignment are turned in on time. Make sure you follow the procedures outlined in each assignment or case study (Blackboard

submissions). Late assignment submissions will be subject to a late penalty of 25% per day. No assignments will be accepted later than four days from the due date.

Grading Timeline

Grades will be submitted and posted a week following homework assignment submission.

Additional Policies

N/A

Course Schedule: A Weekly Breakdown

Provide a detailed course calendar that provides a thorough list of deliverables—readings, assignments, examinations, etc., broken down on at least a weekly basis. The format may vary, but the content must include:

- This course will provide a comprehensive overview of financial technology “FinTech” and its implications in our day to day lives. Students will be learning by doing with hands on assignments to interface with various payment, lending, blockchain technologies.
- This course will introduce our students on the inner workings of traditional banking technology as well as newer implementations of blockchain, smart contracts and cryptocurrency. Students will work in teams to complete assignments, projects and presentations. Each team is required to present their findings, demonstrate their projects in class
- Interested students should have an interest in banking, finance, technology and solving some of difficult issues on expanding credit, investment and payments globally. Students are recommended to have some code experience to complete certain aspects of the class assignment.
- Assignments or deliverables include weekly presentations, research assignments, “demo days” as well as in class group projects and discussions

Week	Main Topics/Daily Activities	In-Class Presentation, Exercise and Discussion	Homework /Due Dates
1 Aug 24th & 26th 2020	Introductions to FinTech	Discuss personal experiences and interactions with Financial Technology.	Download a FinTech related app and make a transaction. (due in week 2)
2 Aug 31st & Sept 2nd 2020	History of FinTech and Traditional Banking Technologies from Bank Branches to ATM machines to mobile technology.	Review the inner works of various FinTech applications such as “Venmo”, “Paypal”, “Robinhood” and various banking apps on your phone.	Explore a traditional banking website and layout every type of product and services delivered through their website (due in week 3)
3 Sept 9th 2020 Labor day Holiday <i>One lecture only this week</i>	Brave New World: Cryptocurrency, Blockchain, Smart Contract.	We will review the history, mystery and invention of blockchain technology and various implementations such as cryptocurrency.	Conduct a transaction on any blockchain sandbox. (due in week 4)
4 Sept 14th & 16th 2020	FinTech Intro: Credit, Payments, Investment, Insurance, Trading	FinTech Topic: Instructor lead presentation on board topics relating to different types of	Discover any FinTech related sandboxes as well as API (application programming interface)

		FinTech and issues they try to solve.	to start a integration project.(due in week 5)
5 Sept 21st & 23rd 2020	Credit – Credit based FinTech companies (Credit cards to mortgages)	FinTech Topic: In class presentation relating specific FinTech solutions relating to issuing credit, loans, mortgages and auto financing.	Pick a Credit base FinTech company and complete a presentation on their core, differentiated offering (Due in week 6)
6 Sept 28th 30th 2020	Payments – Payments based FinTech companies (Cash to Cryptocurrency)	FinTech Topic: In class presentation relating specific FinTech solutions relating to payments, including history of payments, cash, atm, credit cards, automatic clearing house, digital wallets and cryptocurrency).	Download your favorite app and complete a peer to peer payments transaction. Prepare a presentation on all aspects of user experience (Due in week 7)
7 Oct 5th & 7th 2020	Investment – Investment based FinTech companies (Savings to Crowdfunding)	FinTech Topic: In class presentation on various investment related Fintech products and services including (Savings apps, robo advisors, social trading, crowdfunding)	Download your favorite savings or investment app and explore all features and functionalities offered by the app. Prepare a presentation on user experience (Due in week 8)
8 Oct 12th & 14th 2020	Insurance – Insurance based FinTech companies (Personal insurance to shared risk)	FinTech Topic: In class presentation on various insurance related FinTech products from traditional personal injury to shared risk platforms.	Explore various insurance models such as “Lemonade” and prepare a presentation on their unique offerings. (Due in Week 9)
9 Oct 19th & 21st 2020	Trading – Trading/Securities based FinTech companies (Highspeed to stock market)	FinTech Topic: In class presentation on various trading related topics, from voice/data transmission, dedicated transmission networks to highspeed trading algorithms and dark pools	Download your favorite trading app and prepare a presentation on your user experience. (Due in week 10)
10 Oct 26th & 28th 2020	Intro to Banking Technology Introduction (From ATMs to Mobile Apps)	BankTech Topic: Introduction to various banking technologies including customer facing and bank’s internal technologies, processes, innovation cycles and product creation.	Visit a local bank branch and explore various banking technology that’s available to consumers. Prepare a presentation on your

			experience. Or use your favorite banking app and make a transaction.(Due in week 11)
11 Nov 2nd & 4th 2020	Financing and banking regulations, laws and compliance	Regulations Topic: Introduction to various governing and regulatory bodies that have legal and overseeing authorities to Banks and FinTechs. Review major regulators in class and current rulings.	Prepare a presentation on a specific FinTech or banking regulation and discuss in detail on the history and relevance of the law especially securities related regulations that were born out of the great depression. (Due in week 12)
12 Nov 9th & 11th 2020	FinTech Analytics (Credit scores and Artificial Intelligence)	Analytical Topics: Various analytical techniques applied to the banking and financial services industry, including FinTechs	Construct reports or predictive models from publicly or supplied dataset. (Due in week 13)
13 Nov 16th & 18 2020	FinTech Infrastructure (Tools and Data)	FinTech Topics: Building from scratch or leveraging existing technology? We will discuss various rails, technology, foundational building blocks on how to build a fintech company.	Integrate with Plaid or any open banking platform’s sandbox and prepare a demo in class. (Due in week 14)
14 Nov 23rd, 2020 Thanksgiving Holiday <i>One lecture only this week</i>	FinTech Around the Globe	FinTech Topics: Looking at FinTech developments in Latin America, Asia and Africa as well as Middle East. Exploring various creative ways to get people access to credit, payments and banking.	Prepare a presentation of FinTech around the world. Pick a country or region and present your findings. (Due in week 15)
15 Nov 30th 2020	Final FinTech Presentations	Each student or group (consist of 4 to 6 students) will make a financial presentation of the specific topic selected. Presentation should be from 7 to 10 minutes. Peer review and Q and A will follow each presentation for another 5 minutes.	

<p>FINAL</p> <p><i>Refer to the final exam schedule in the USC Schedule of Classes at classes.usc.edu</i></p>	<p>Final Exam</p>	<p>Final Exam</p>	<p>Final Exam consists of topics thought throughout the semester. It will contain multiple choice questions, short answers as well as a short essay.</p>
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Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.