FINANCE 408 (previous taught as FIN 497T)

Topics in Financial Technology (3 Credits)

Fall 2022

Professor <PROF_FULL_NAME>

Email: <PROF_EMAIL>

Course time and location:
Tuesday/Thursday 11:30AM - 12:45PM
School of Management N135

Office hours
By appointment, Tuesdays, 1:30 pm- 2:30 pm.
Zoom link: <LINK_ZOOM>

This syllabus is subject to change. Changes will be announced in class and updated in the syllabus.

Course Outline

This course will cover an overview of financial technology and its various applications. The specific topics include fintech and financial service, blockchain and cryptocurrencies, machine learning, etc.

The course has two major goals. The first will be to provide students with an opportunity to explore recent technological changes happening in financial services and learn the business models of fintech companies through case studies. The second will help students learn empirical methods and analyze financial data using programming languages.

The number of credits for the class are 3.

Prerequisites

FIN 301, FIN 304 and FIN 305

All data analysis in the class will be conducted in R. I highly encourage students to learn basic knowledge of R before starting the class.

Materials

Case studies

a. Cutting through the Fog: Finding a Future with Fintech
b. Deutsche Bank: Pursuing Blockchain Opportunities (A)

c. The Wealthfront Generation
d. Domeyard: Starting a High-Frequency Trading (HFT) Hedge Fund

Course pack link: <LINK>

Programming Resources

We will use R for our data exercise. You could use the following link to download R on your computer.
Installing R: https://rstudio-education.github.io/hopr/starting.html

Optional Books

- An Introduction to Statistical Learning, by James, Witten, Hastie, and Tibshrani
- Elements of Statistical Learning by Hastie, Tibshrani, and Friedman

Attendance Policy

I expect you to show up in all classes. Any need for absences should be pre-requested by e-mail to the instructor.

Grading

- Group projects are encouraged to be done in groups of **four or five**. You can form your own groups, or I will assign you to groups randomly.
- Group assignments include solving three cases and one problem set with data analysis.
- The final group project requires an in-depth analysis of a fintech company. You will present your findings in class and submit a project report.
- At the end of the semester, group members will evaluate other members' contributions.
- There will be one individual exam during the semester.
- I expect you to show up in all classes. Any need for absences should be pre-requested by e-mail to the instructor.
- For the class to be a success, I need your active participation. You are strongly encouraged to **ask questions** as we proceed through the material. Your class participation score will be based on my evaluation of your level of participation in-class activities and discussions. When final grades are determined, those students who made substantial contributions in class and were active in the course may get **extra "bonus" points.**

	Percentage
Exam (individual)	30%
Group assignments (group)	30%
Final group project (group)	25%
Peer evaluation (individual)	5%
Class participation (individual)	10%

Grading Scale

A (93-100)	B- (80-82)	D+ (66-69)
A- (90-92)	C+ (76-79)	D (63-65)
B+ (86-89)	C (73-75)	D- (60-62)
B (83-85)	C- (70-72)	F (0-59)

Tentative Schedule

	Topic	Note
Week1: 9/6, 9/8	Lecture 1-2: Introduction	Form Groups and put it on Google shared doc by Sep 10.
Week 2: 9/13, 9/15	Lecture 3-4: Fintech and Financial Service, The Wealthfront Generation case	
Week 3: 9/20, 9/22	Lecture 5: Fintech and Financial Service Lecture 6: Block-Chain and Bitcoin	Case I Due (9/21, 11:59:59 pm)
Week 4: 9/27, 9/29	Lecture 7-8: Block-Chain and Bitcoin, Deutsche Bank case	
Week 5: 10/4, 10/6	Lecture 9-10: Block-Chain and Bitcoin	
Week 6: 10/11, 10/13	Lecture 11: Smart Contract Lecture 12: Coding with R	Case II Due (10/12, 11:59:59 pm)
Week 7: 10/18, 10/20	Lecture 13: Coding with R Lecture 14: Machine Learning in finance	
Week 8: 10/25, 10/27	Lecture 15: Machine Learning in finance Lecture 16: Machine Learning in finance	Problem Set: Data analysis Due (10/26, 11:59:59 pm)
Week 9: 11/1, 11/3	Lecture 17: Quantitative Trading Lecture 18: Reading Session	
Week 10: 11/8, 11/10	Lecture 19: **In-class Exam** Lecture 20: Quantitative Trading	
Week 11: 11/15, 11/17	Lecture 21: Guest Lecture (Zoom 11:30am-12:45pm) Lecture 22: Guest Lecture (Zoom 11:30am-12:45pm)	Read Domeyard Case
Week 12: 11/22, 11/24	Thanksgiving break	Project Proposal Due (11/21, 11:59:59 pm)
Week 13: 11/29, 12/1	Lecture 23: Quantitative Trading, Domeyard Case Discussion Lecture 24: Group Project Meetings	
Week 14: 12/6, 12/8	Lecture 25-26: Final Group Presentations	Final Group Project Due (12/5, 11:59:59 pm)

Additional Information

Accommodation Statement

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements. For further information, please visit Disability Services (https://www.umass.edu/disability/).

Academic Honesty Statement

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent (http://www.umass.edu/dean_students/codeofconduct/acadhonesty/).

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