The Hong Kong University of Science and Technology

Course Syllabus

[Course Title] Engineering Foundations of FinTech

[Course Code] IEDA 4500

[No. of Credits] 3

[Pre-requisites] IEDA 3330 or FINA 3203

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Course Description

FinTech, short for financial technology, is a remarkably booming industry that aims at improving traditional financial services by applying novel technologies. In this course, students will acquire an understanding of popular financial technologies and learn how they are employed to enhance the effectiveness and efficiency of the existing financial systems. More specifically, this course will cover important financial technologies and innovations, including investment and financing technologies such as P2P lending, crowdfunding, and microloans, payment technologies such as digital wallets and mobile payments, wealth management technologies such as robo-advisors, and blockchain technologies such as cryptocurrencies (e.g., bitcoin)

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Homework	30%
Final Project	70%

Required Texts and Materials

Reference books:

1. A. Narayanan, J. Bonneau, E. Felten, A. Miller, and S. Goldfeder. (2016). Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction. Princeton University Press.
2. Sheldon M. Ross. (2014). Introduction to Probability and Statistics for Engineers and Scientists. Fifth Edition, Academic Press.
3. Sheldon M. Ross. (2019). Introduction to Probability Models. Twelfth Edition, Academic Press.
4. S. Shreve. (2005). Stochastic Calculus for Finance I: The Binomial Asset Pricing Model. Springer Science and Business Media.
5. S. Shreve. (2004). Stochastic Calculus for Finance II: Continuous-Time Models. Springer Science \& Business Media.
6. L. Thomas, J. Crook, and D. Edelman. (2017). Credit Scoring and Its Applications. Second Edition, SIAM.

As well as lecture slides to be provided on the course.