

课程详述

COURSE SPECIFICATION

以下课程信息可能根据实际授课需要或在课程检讨之后产生变动。如对课程有任何疑问，请联系授课教师。

The course information as follows may be subject to change, either during the session because of unforeseen circumstances, or following review of the course at the end of the session. Queries about the course should be directed to the course instructor.

1.	课程名称 Course Title	金融科技原理 Principles of FinTech				
2.	授课院系 Originating Department	金融系 Department of Finance				
3.	课程编号 Course Code	FET102				
4.	课程学分 Credit Value	3				
5.	课程类别 Course Type	专业选修课 Major Elective Courses				
6.	授课学期 Semester	秋季 Fall				
7.	授课语言 Teaching Language	中英双语 English & Chinese				
8.	授课教师、所属学系、联系方式 (如属团队授课, 请列明其他授课教师) Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	严硕, 金融系, Email: yans@sustech.edu.cn Shuo YAN, Department of Finance				
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	韩雨竹(助教), 金融系, hanyz3@mail.sustc.edu.cn Yuzhu Han, Department of finance,				
10.	选课人数限额(可不填) Maximum Enrolment (Optional)	40 人				
11.	授课方式 Delivery Method	讲授 Lectures	习题/辅导/讨论 Tutorials	实验/实习 Lab/Practical	其它(请具体注明) Other (Please specify)	总学时 Total
	学时数 Credit Hours	48				48

12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	
14. 其它要求修读本课程的学系 Cross-listing Dept.	

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课程涉及到有关金融科技相关多方面的知识，所包含的主题有：互联网金融的生态与发展、数据货币与区块链技术的理论基础与应用、在线支付、大数据、金融网络安全和金融信息加密系统等等。本课程不仅要为学生们提供完备的金融科技理论基础，更着重于引导他们从真实的案例中发掘创新点，深入了解金融科技为金融行业和创新创业所带来的巨大变革，从而对未来金融科技和金融行业的发展趋势提出具体的个人认识。

This course covers a wide range of knowledge about financial technology. The main topics include: the ecology and development of Internet finance, the theoretical basis and application of data currency and blockchain technology, online payment, big data, financial network security and financial information encryption systems. This course not only provides students with a complete theoretical foundation of financial technology, but also focuses on guiding them to explore innovations from real-life cases, and to gain insight into the tremendous changes that financial technology has brought to the financial industry and innovation, so as to put forward specific personal understanding of the future development trend of financial technology and financial industry.

16. 预达学习成果 Learning Outcomes

通过本课程的学习，一个成功的学习者能够：

1. 了解金融科技对传统金融行业所带来的挑战、现实意义和未来的影响。
2. 了解金融科技涉及的主要领域和各个领域内的发展状况及他们的应用场景。
3. 了解金融科技为未来金融业的发展提供的可能性和机遇。
4. 从不同的金融业参与者角度掌握并实践现有金融科技的关键技术，并根据个人偏好提出，以实用性和市场需求为出发点，提出个人认为可行的金融科技初创企业设想和方案。

Through this course, a successful learner can:

1. Understand the challenges, practical significance and future impact of financial technology on the traditional financial industry.
2. Understand the major areas of financial technology, the developments in various fields and their application scenarios.
3. Understand the possibilities and opportunities that financial technology provides for the future development of the financial industry.
4. Implement the key technologies of existing financial technology from the perspective of different financial industry participants, and according to personal preference, put forward feasible ideas and plans for financial technology start-ups based on practicality and market demand.

17. 课程内容及教学日历（如授课语言以英文为主，则课程内容介绍可以用英文；如团队教学或模块教学，教学日历须注明主讲人）

Course Contents (in Parts/Chapters/Sections/Weeks. Please notify name of instructor for course section(s), if this is a team teaching or module course.)

第一章：金融科技和现状介绍 - 金融科技是如何改变现代创新创业模式的（3学时）

在本章节中，学习者将从大公司、企业家、投资者和消费者的角度，对金融科技进行多维视角的总体简介。以便学习者对金融科技的发展历史及其概况，以及本项课程的课程目标有基本的了解。

第二章：金融科技的政策和监管（3学时）

在本章节中，学习者将了解到政府用来监管金融市场的一些工具，预览金融科技公司面临的关键监管挑战，及其相关的一些案例。在本章中，我们会详细的介绍监管机构在应对新金融科技发展方面所面临的挑战，并详细的说明各国监管机构迄今为止针对金融科技所出台的立法和监管情况。

在本章节中我们拟采用随堂测验的方式，对学习者的学习效果进行客观、自动化的线上评量。

第三章：金融科技投资者和企业家精神（3学时）

在本章节中，学习者将了解到什么是企业家精神，及金融科技的投资者所需具备的企业家精神。在本章节的学习中拟设计线上讨论问题及相关的习题练习，与学习者进行互动，并测试学习者的学习效果。

第四章：金融科技与众筹（3学时）

在本章节中，学习者将了解到在互联网金融转型金融科技的大背景下，通过新技术来优化原有众筹行业的基本逻辑，并了解到众筹的主要风险类型和众筹风险的防范，以及金融科技对众筹概念和内涵的拓展。在本章节的学习中我们拟加入金融科技相关的案例介绍来对学习者的辅助学习。

第五章：大数据与金融科技发展（3学时）

在本章节中，学习者将了解到金融科技背景下大数据在金融服务中的应用。通过数据处理技术、数据科学、数据工程相结合的业务场景，了解金融科技是如何改造传统金融服务体系的，以及大数据技术是如何运用于产品设计、用户体验、风险管理等领域的。在本章节中我们拟设计课程相关的小组项目，让学习者以小组为单位，共完成一项金融科技的项目设计，以此与学习者进行相关互动。

第六章：区块链技术和数字货币（3学时）

在本章节中，学习者将了解到区块链与数字货币的相关概念，以及区块链与数字货币的相关关系，同时学习者还将了解到作为金融科技领域最热门的技术之一的区块链技术在数字货币方面的应用及前景。我们拟在本章节中加入金融科技相关的发展案例进行辅助学习。

第七章：在线支付、数字钱包和数字汇兑（3学时）

在本章节中，学习者将了解到在线支付、数字钱包和数字汇兑的发展现状，及在金融科技背景下的发展前景。本章节中拟设计随堂测验进行客观、自动化的线上评量。

第八章：网络安全和加密技术（3学时）

在本章节中，学习者将了解到金融科技发展过程在网络安全及数据隐私方面所面临的挑战，及安全加密技术的多方应用。以及这些应用是如何改变了传统金融服务的安全和私密性的。我们会在本章节中加入课程相关的发展案例来帮助学习者进行辅助学习。

中期测评课程：

在本次测评前，我们拟对参课人员进行小组划分，并公布测评课题，让各小组以小组的形式完成课题报告，并在测评课上进行小组间的同行评审，最终将评审分数作为课程总成绩的一部分，占比30%。

第九章：智能投顾和资产管理（3学时）

在本章节中，学习者将了解到金融科技对中国资产管理行业的影响。及在金融科技的背景下，智能投顾作为金融与人工智能结合的一个重要方向，其产业链发展的情况。并且我们会分析智能投顾与传统投顾相比的优劣势，同时梳理国内外智能投顾行业的发展情况，进而揭示目前中国发展智能投顾可能存在的风险。我们拟在本章节中加入课程相关的发展案例来对学习者的辅助学习。

第十章：P2P金融和在线融资（3学时）

在本章节中，学习者将了解到P2P金融和在线融资的概念，及金融科技背景下两者的发展现状及前景。同时我们将使用大量的中国已有的P2P金融案例，来对在线融资和P2P金融的发展历史和相关概念进行分析和讲述。帮助学习者理解这两种新兴的金融概念。

第十一章：个人理财和零售保险的科技化（3学时）

在本章节中，学习者将了解到金融科技对个人理财及零售保险业带来的科技化改变。以及这种变革与我们的日常生活的联系。我们拟在本章节的学习中加入线上讨论问题，与学习者进行互动。

第十二章：IPO流程和ICO流程（3学时）

在本章节中，学习者将了解到 IPO 流程和 ICO 流程的概念，及两者之间的差异。我们在本章节中拟设计随堂测验，并让学习者以小组的形式进行 ICO 和 IPO 流程的相关模拟练习，从而进行客观、自动化的线上评量。

第十三章：智能合约与公司治理（3 学时）

在本章节中，学习者将了解到智能合约的概念，智能合约与区块链技术的关系，及智能合约的应用对公司治理结构的影响。我们拟在本章节中拟加入课程相关的发展案例进行辅助学习。

第十四章：智能合约发展下的银行中介作用（3 学时）

在本章节中，学习者将了解到智能合约发展下的银行中介作用。及金融科技是如何改变银行中介作用，并促进银行对实体经济的支持作用的。我们拟在本章节中加入与课程相关的发展案例来对学习者进行辅助学习。

第十五章：AI 与量化交易（3 学时）

在本章节中，学习者将了解到量化交易的概念，量化交易的人工智能趋势。自动学习（AI）的基本概念，以及 AI 是如何与量化交易相结合的。我们拟在本章节中加入随堂测验进行客观、自动化的线上评量。

期末测评课程：

我们将采用分组大作业的形式，让学习者根据已经具备的金融科技知识，设计一个金融科技与金融服务相结合的项目，并在期末的时候对此项目的原理、运行机制和未来市场效益进行答辩分析。并采用小组打分的形式，将本次分数和期中考试分数进行结合，作为本次课程的最终分数计入总成绩

Chapter 1: Introduction to Financial Technology and Status – how does financial technology change the mode of modern innovation and entrepreneurship (3 Hours)

In this chapter, learners will provide an overview of the multidimensional perspective of financial technology from the perspective of large companies, entrepreneurs, investors, and consumers. So that learners can have a basic understanding of the history of financial technology and its profile, as well as the course objectives of this course.

Chapter 2: Policy and Supervision of Financial Technology (3 Hours)

In this chapter, learners will learn about some of the tools that the government uses to regulate financial markets, and preview the key regulatory challenges that financial technology companies faces with, as well as some related cases. We will introduce the challenges faced by regulators in responding to the development of new financial technologies. We will also explain the legislation and supervision of financial institutions in various countries in detail.

In this chapter we intend to use a quiz to evaluate the learning outcomes through an objective, automated online assessment system.

Chapter 3: Financial Technology Investors and Entrepreneurship (3 Hours)

In this chapter, learners will learn what entrepreneurship is and the entrepreneurial spirit that fintech investors need. In the process of learning, we plan to design online discussion questions and related exercises to interact with learners and test learners' learning effects.

Chapter 4: Financial Technology and Crowdfunding (3 Hours)

In this chapter, learners will learn about the basic logic of optimizing the original crowdfunding industry through new technologies under the context of Internet financial transformation of financial technology, understand the main types of risk and the prevention of crowdfunding risks. And learners will learn about the expansion of the concept and connotation of crowdfunding by financial technology. In the process of learning, we intend to join the case of financial technology as a supplementary learning.

Chapter 5: Big Data and Financial Technology Development (3 Hours)

In this chapter, learners will learn about the use of big data in financial services under the context of financial technology. Through the combination of data processing technology, data science, and data engineering, learners will understand how financial technology transforms traditional financial service systems and how big data technologies are used in product design, user experience, and risk management. To interact with learners, we intend to design a course-related group project, so that learners can complete a financial technology project design in groups.

Chapter 6: Blockchain Technology and Digital Currency (3 Hours)

In this chapter, learners will learn about the concepts of blockchain and digital currency, as well as the relationship between blockchain and digital currency. At the same time, learners will also learn about the application and prospects of blockchain technology, one of the most popular technologies in the field of financial technology, in digital currency. In the process of learning, we intend to join the case of financial technology as a supplementary learning.

Chapter 7: Online Payments, Digital Wallets and Digital Exchanges (3 Hours)

In this chapter, learners will learn about the current state and the future of online payment, digital wallet and digital exchange under the context of financial technology.

Chapter 8: Network Security and Encryption Technology (3 Hours)

In this chapter, learners will learn about the challenges of financial technology development in terms of network security and data privacy, as well as the multi-faceted application of secure encryption technology. And how these applications have changed the security and privacy of traditional financial services. In the process of learning, we intend to join the case of financial technology as a supplementary learning.

Mid-term evaluation course

Before this assessment, we plan to divide the participants into groups and publish the assessment topics so that the teams can complete the project report in the form of a group. Peer review will be conducted between the groups in the assessment class, and the judging score will be included as part of the total score of the course, accounting for 30%.

Chapter 9: Smart Investment and Asset Management (3 Hours)

In this chapter, learners will learn about the impact of financial technology on the Chinese asset management industry. And in the context of financial technology, smart investment as an important direction of the combination of financial and artificial intelligence, the development of its industrial chain. We will analyse the advantages and disadvantages of smart investment compared with traditional investment, and at the same time sort out the development of smart investment industry at home and abroad, and then reveal the possible risks of China's development of smart investment. We intend to include course-related development cases in this chapter as a supplementary learning.

Chapter 10: P2P Finance and Online Finance (3 Hours)

In this chapter, learners will learn about the concepts of P2P finance and online financing, and the current status and prospects of both in the context of financial technology. At the same time, we will use a large number of existing P2P financial cases in China to analyse and describe the development history and related concepts of online financing and P2P finance to help learners understand these two emerging financial concepts.

Chapter 11: The Science and Technicalization of Personal Finance and Retail Insurance (3 Hours)

In this chapter, learners will learn about the technological changes that financial technology brings to personal finance and retail insurance, as well as the connection between this change and our daily lives. We intend to add online discussion questions to interact with learners in this chapter.

Chapter 12: IPO Process and ICO Process (3 Hours)

In this chapter, learners will learn about the concepts of IPO processes and ICO processes, as well as the differences between the two. In this chapter, we plan to design a quiz and conduct an objective, automated online assessment of the test results. And learners will conduct simulation exercises related to ICO and IPO processes in small groups.

Chapter 13: Smart Contracts and Corporate Governance (3 Hours)

In this chapter, learners will learn about the concept of smart contracts, the relationship between smart contracts and blockchain technology, and the impact of smart contract applications on corporate governance structures. We intend to include course-related development cases in this chapter as a supplementary learning.

Chapter 14: Banking Role under the Development of Smart Contracts (3 Hours)

In this chapter, learners will learn about the role of banking intermediation under the development of smart contracts. And how financial technology has changed the role of banking intermediation and promoted the support of banks for the real economy. We intend to include course-related development cases in this chapter as a supplementary learning.

Chapter 15: AI and Quantitative Trading (3 Hours)

In this chapter, learners will learn about the concept of quantitative trading and quantify the trend of artificial intelligence in trading, as well as the basic concepts of automatic learning (AI) and how AI is combined with quantitative trading. We plan to design a quiz and conduct an objective, automated online assessment of the test results.

Final evaluation course (3 Hours)

We will use the form of group work to enable learners to design a project combining financial technology and financial services based on the existing financial technology knowledge. At the end of the period, each group needs to defend the principle, operation mechanism and future market benefits of this project. We will score this item in the form of a group scoring and combine this score with the mid-term test score as the final score of the course.

18. 教材及其它参考资料 Textbook and Supplementary Readings

- The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries – Susanne Christi/Janos Barberis (Wiley, 2016)
- Fintech Innovation: From Robo-Advisors to Goal Based Investing and Gamification - Paolo Sironi (Wiley, 2016)

课程评估 ASSESSMENT

19. 评估形式 Type of Assessment	评估时间 Time	占考试总成绩百分比 % of final score	违纪处罚 Penalty	备注 Notes
出勤 Attendance				
课堂表现 Class Performance		20		
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments				
期中考试 Mid-Term Test		30		
期末考试 Final Exam		50		
期末报告 Final Presentation				
其它（可根据需要 改写以上评估方式） Others (The above may be modified as necessary)				

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20. 记分方式 GRADING SYSTEM

A. 十三级等级制 Letter Grading
 B. 二级记分制（通过/不通过） Pass/Fail Grading

课程审批 REVIEW AND APPROVAL

21. 本课程设置已经过以下责任人/委员会审议通过
 This Course has been approved by the following person or committee of authority

