《金融建模与数据分析（英语）》课程简介

Financial Modelling and Data Analysis

课程代码：151383B **Course Code：151383B**

课程名称: 金融建模与数据分析(英语) **Course Name：**Financial Modelling and Data Analysis

学时：48 **Periods：48**

学分：3 **Credits：3**

考核方式：考查 **Assessment：**Assignment

先修课程：微积分、概率论与数理统计 **Preparatory Courses：**Calculus, probability and statistics

该课程旨在提高学生利用数理知识分析解决金融问题的能力，其多数篇幅在于讲授离散模型下的资产定价问题，通过无套利定价原理、测度变换、马尔科夫链及鞅的性质、停时的性质等分析工具解决各类衍生品的定价问题，给出具有一般性的结论。同时还会讲授离散模型与连续时间金融的联系，为其进一步学习研究打下基础。该课程会引导学生将金融问题转化为数理模型，并利用概率论中的数学知识进行解答，从而培养其科学建模、严谨分析的学术能力，增强其数学基础，对资产定价原理有更深入准确的认识；同时该课程还会引导学生理性看待我国金融市场的波动，探索完善的金融市场对于促进人民美好生活的作用，分析社会主义优越性在健全金融产品交易制度方面的作用。

This course aims to improve students’ ability in using mathematical principles to solve financial problems. Most of this course is devoted to analyzing asset pricing problem in discrete models. We will use tools including no-arbitrage pricing principle, change of measures, and the properties of Markov process, martingales and stopping times to price different kinds of financial derivatives, and give quite general results. We will also demonstrate the connections between discrete models and continuous-time finance models, which can lay the foundation for further study. This course will guide students to convert financial problems to mathematical models, and solve them with knowledge in the area of probability, so that we can cultivate students’ academic ability in building models and rigorous analysis. This course will definitely strengthen students’ quantitative analysis, and help them gain deeper and more accurate understanding in asset pricing. This course will also guide students to deal with volatilities of financial markets in China in a rational way, and explore the effects of a perfect financial market in promoting people’s life quality. Besides, it will also help students to analyze the advantage of socialism in improving the mechanism of tradings for financial products.