

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	量化投资分析 Quantitative Investment Analysis				
2.	授课院系 Originating Department	金融系 Department of Finance				
3.	课程编号 Course Code	FIN413				
4.	课程学分 Credit Value	3				
5.	课程类别 Course Type	专业基础课 Major Foundational 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)	周侗, 助理教授, 金融系 ZHOU Ti, Assistant Professor, Department of Finance, 邮箱/Email: zhout@sustech.edu.cn 办公室/office: 慧园 3 栋 323, Wisdom Valley 3#323				
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	待公布 To be announced				
10.	选课人数限额(可不填) Maximum Enrolment (Optional)					
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	计量经济学 Econometrics FIN303 金融与投资概论 Financial Investments FIN301
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 None
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 None

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课程有两个目标：

介绍量化投资的基本框架和理论以及相关的数量工具

熟悉金融市场数据并且应用所学理论进行量化投资

There are two goals for this course:

1. Provide you with an introduction to the fundamental framework and theory of quantitative investment as well as required quantitative tools used in investment analysis.

2. Expose you to real data on financial securities, and learn how to apply the theory to do quantitative investment.

16. 预达学习成果 Learning Outcomes

During this course, you will learn the basic framework of quantitative investment, including portfolio choice theory; linear factor models and their testing methods; CAPM anomalies; event driven strategies; Barra model; performance evaluation and attribution; asset allocation (Black-Litterman); fixed income and option investment.

In addition, you will be familiar with commonly used financial database such as WIND (China) and WRDS (US data), and master some statistical packages such as SAS, Matlab or R. You will also apply the theory to do real data analysis and design active quantitative investment strategies.

1.掌握量化投资的基本框架: 投资组合理论, 因子模型和检验方法; CAPM 异像; 事件驱动策略; BARRA 模型; 业绩评估和业绩归因; 大类资产配置模式; 固定收益和衍生品投资。

2.熟悉常见的金融数据库(WIND/WRDS)和统计软件(SAS/Matlab/R), 应用所学理论对实际金融资产数据进行数据分析, 构建量化投资组合。

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.)

1. Course overview (1 Lecture) 课程综述 (1 学时)
2. Portfolio Choice and mean-variance mathematics (8 Lectures) 投资组合和均值方差分析 (8 学时)
3. Linear factor model and their testing methods (8 Lectures) 线性因子模型和检验方法(8 学时)
4. CAPM anomalies and behavioral finance: factors V.S characteristics (6 Lectures) 资本资产定价模型异像和行为金融学: 因子 VS 特征 (6 学时)
5. Barra model for quantitative equity investment (6 Lectures) BARRA 量化股票投资模型 (6 学时)
6. Performance evaluation and attribution (3 Lectures) 业绩评估和业绩归因 (3 学时)
7. Asset allocation: Black-Litterman model (4 Lectures) 资产配置: Black-Litterman 模型 (3 学时)
8. Event driven strategies (3 Lectures) 事件驱动策略 (3 学时)
9. Option-implied information (5 Lectures) 期权隐含信息 (5 学时)
10. Volatility forecasting and trading (3 Lectures) 波动率预测与交易 (3 学时)
11. Fixed income investment (2 Lectures) 固定收益投资 (2 学时)

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

Textbook: 投资学(英文版·原书第9版) 滋维·博迪 (Zvi Bodie), 亚历克斯·凯恩 (Alex Kane), 艾伦 J. 马库斯 (Alan J. Marcus), 汪昌云 (注译), 张永冀 (注译)

其他参考书 Other reference:

1. Edwin J. Elton, Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, 2011, Modern Portfolio Theory and Investment Analysis (8th edition). (A good reference for more math-oriented undergraduate students.)
2. Edward E. Qian Ronald H. Hua Eric H. Sorensen, 2007, Quantitative Equity Portfolio Management: Modern Techniques and Applications. (Quantities equity investment in theory and practice)
3. John C. Cochrane, 2005, Asset Pricing (Revised Edition). (Graduate-level textbook in asset pricing.)
4. John Y. Campbell, Andrew Lo, and A. Craig MacKinlay, 1996, The Econometrics of Financial Markets. (Graduate-level textbook in empirical asset pricing)
5. Journal Articles
6. MSCI Barra Handbook

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		5		
课堂表现		10		

Class Performance			
小测验 Quiz	20 (X2)		
课程项目 Projects	25		
平时作业 Assignments	40 (X4)		
期中考试 Mid-Term Test			
期末考试 Final Exam			
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)			

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

金融系课程规划与审核委员会
 Curriculum Planning and Review Committee, Dept. of Finance

