

金融学（金融工程）

一、培养目标

本专业培养适应社会主义市场经济建设需要，德、智、体、美全面发展，能够适应开放经济环境，具备扎实的经济学、金融学、财务管理、应用数学基础和较强的计算机应用能力与良好的外语水平，系统掌握金融工程基本理论与方法，能够开发、设计、组合新的金融工具和交易手段，具备有效解决金融财务问题的专门知识与基本技能，具有良好的思想、业务、文化和身心素质，具有较强的实践创新和应用能力，能在金融机构、工商企业及其他相关部门从事财务、金融产品设计、资产定价、风险管理、投资和融资分析等工作的复合型、应用型专门人才。

二、基本规格要求

本专业学生要求具备以下核心能力：宏观经济分析能力；金融财务处理能力；金融风险管理能力；资产定价分析能力；金融交易操作能力；科学研究数理能力；健康全面的人文素养。

三、培养特色

扎实的数理功底和计算机应用基础，突出应用型、创新性、国际化人才的培养特色，强调交叉学科的思维培养。

四、学制、毕业基本要求及学位授予

1. 本科基本学制 4 年，弹性学习年限 3—6 年，按照学分管理制度管理。

2. 金融学专业（金融工程方向）学生毕业最低学分数为 160 学分，其中各类别课程及环节要求学分数如下表：

课程类别	通识必修	学门核心	学类核心	专业核心	专业选修	通识选修	集中实践	合计
学分数	27	29	30	24	21	8	21	160

3. 学生修满培养方案规定的必修课、选修课及有关环节，达到规定的最低毕业学分数，并修完规定必修但不记学分的所有课程和环节，德、智、体合格，即可毕业。满足学位授予相关文件要求的，授予经济学学士学位。

五、课程设置及学分分布

（一）通识教育课程 [必修 27 + (6) 学分 + 选修 8 学分]

通识教育课程包括必修和选修两部分。通识选修课程按《湖南大学通识选修（文化素质教育）课程方案》实施，通识必修课程如下：

编码	课程名称	学分	备注
GE01101	毛泽东思想和中国特色社会主义理论体系概论	3+ (3)	
GE01039	思想道德修养与法律基础	1.5+ (1.5)	
GE01100	形势与政策	0.5+ (1.5)	
GE01102	中国近现代史纲要	2	

续表

编码	课程名称	学分	备注
GE01103	马克思主义基本原理 (上)	2	
GE01104	马克思主义基本原理 (下)	2	
GE01012 (-15)	大学英语	8	
GE01088	计算机基本能力测试	0.5	
GE01105	计算机导论与程序设计	2.5	
GE01107 (-13)	心理素质与生涯发展	1	
GE01089 (-92)	体育	4	

(二) 学门核心课程 (29 学分)

学门核心课程 (29 学分)

编码	课程名称	学分	备注
GE03035 (-37)	数学分析 B (1、2、3)	15	
GE03030	高等代数 B	6	
GE03039	微观经济学	4	
GE03040	宏观经济学	4	

(三) 学类核心课程 (30 学分)

学类核心课程 (30 学分)

编码	课程名称	学分	备注
ET04009	基础会计学	3	
ST03003	概率论	4	
FI04002	金融学	4	
FI04013	管理学	3	
FI05020	运筹学	3	
ST04006	统计学	4	
FI04008	动态规划与随机控制	3	
ST04008	数理统计	3	
BA04043	常微分方程 A	3	

(四) 专业核心课程 (24 学分)

专业核心课程 (24 学分)

编码	课程名称	学分	备注
FI05028	金融随机分析	3	
FI04005	国际金融学	3	
FI04012	投资学 (证券投资)	3	
FI05011	公司金融	3	
FI05026	金融工程学	3	
FI05027	金融计量学	3	
FI04011	风险管理 (金融方向)	3	
FI05030	金融衍生品定价与管理	3	

(五) 专业选修课程 (21 学分)

专业选修课程 (21 学分)

编码	课程名称	学分	备注
FI06079	数值计算方法	3	
BA06211	经济法	2	
FI06085	资产定价理论	3	
ST06002	统计软件与应用	2	
FI05025	博弈论	3	
FI05013	组合投资与管理	2	
FI06012	个人理财	2	
FI06078	实物期权	2	
FI06013	固定收益证券	2	
FI06051	证券投资分析	2	
FI06026	金融交易技术分析实验	1	
FI05014	商业银行管理学	3	
FI06088	数据库原理与应用	3	
FI0509	中央银行学	3	
FI06028	金融市场营销学	2	
FI06038	商业银行业务模拟	1	
FI06069	财富管理	2	
FI06025	金融监管学	2	
FI06077	量化投资	3	
FI06044	投资银行学	3	
FI06071	互联网金融	2	
FI06086	走入金融世界（专业导论课）	1	
FI06073	金融工程前沿（高级研讨课）	1	

注：鼓励学生自主选修本专业或跨专业任选课程，学分不少于应选学分的 50%。

(六) 集中实践 (21 学分)

集中实践 (21 学分)

编码	课程名称	学分	备注
GE01040	军事训练（含军事理论课程）	0	
GE09002	仿真平台与工具应用实践	2	
GE09028	英文应用写作训练 A	1	
GE09030	中文写作实训 A	1	
GE09024	工程认识实习	1	
FI10033	社会实践与调查	1	
FI10027	金工专业仿真实验 1	1	
FI10028	金工专业仿真实验 2	1	
FI10029	金工专业仿真实验 3	1	
FI10026	毕业实习	2	
FI10025	毕业论文（导师指导课）	10	

注：鼓励学生积极参与课外创新实践活动，学生在大学期间获得国家级、省级、校级 SIT 立项并结项，获得国家级、省级大学生挑战杯奖项，参加中国金融教育发展基金会组织的大学生暑期社会调查大赛，学术论文发表，参与老师课题项目，参加其他形式的社会实践或社会调查并提交报告等，记《社会实践与社会调查》1 学分。

六、课程责任教师一览表

序号	姓名	职称	学历学位	专业特长	课程 (专业核心、专业选修、通识选修)
1	杨招军	教授	博士	金融工程	金融随机分析
2	蔡晓春	教授	博士	计量经济学	金融计量学
3	胡宗义	教授	博士	数量金融, 可计算均衡模型	数值计算方法
4	何平平	副教授	博士	互联网金融与保险	互联网金融
5	李海奇	助理教授	博士	计量经济学	风险管理(金融方向), 资产定价理论
6	胡荣才	副教授	博士	数量金融	运筹学
7	陈 勇	副教授	博士	金融工程	金融工程学, 财富管理
8	谭德俊	副教授	博士	数量金融	数理统计学
9	刘再华	副教授	博士	金融工程方法	博弈论
10	马 勇	助理教授	博士	金融工程	动态规划与随机控制, 量化投资
11	宋丹丹	助理教授	博士	数量金融	金融衍生品定价与管理, 实物期权
12	孔志周	助理教授	博士	统计学	统计软件与应用
13	刘 轶	副教授	博士	金融市场理论	金融市场学, 衍生金融工具
14	伍 伟	副教授	博士	风险管理	组合投资与管理、证券投资分析、金融交易技术分析实验
15	周再清	副教授	博士	银行会计	商业银行管理学、商业银行业务模拟、个人理财
16	陆国庆	副教授	博士	证券投资分析	金融交易技术分析实验、证券投资分析
17	王天轶	助理教授	博士	金融市场理论、金融工具投资分析	金融市场学
18	张 磊	助理教授	博士	国际金融学、投资理论	金融学、国际金融学、
19	肖百龙	助理教授	博士	数理统计学	数理统计学、随机过程
20	戴晓凤	教授	博士	金融投资、金融衍生工具	衍生金融工具、组合投资与管理、金融市场学
21	周鸿卫	教授	博士	金融工程、银行管理方法	金融工程学、商业银行管理学、技术经济与项目评估
22	邵新力	副教授	硕士	国际金融、国际支付管理与交易技术	国际金融学、国际结算、国际金融实验
23	晏艳阳	教授	博士	公司金融、金融市场理论	金融市场学

续表

序号	姓名	职称	学历学位	专业特长	课程 (专业核心、专业选修、通识选修)
24	彭建刚	教授	博士	银行管理、金融工程学	商业银行管理学、金融工程学、技术经济与项目评估
25	龙海明	教授	博士	经济项目评估、银行会计	技术经济与项目评估、商业银行管理学、公司金融
26	张学陶	副教授	硕士	市场营销	金融市场营销学、商业银行管理学
27	王修华	副教授	博士	银行业务与管理	商业银行管理学、商业银行业务模拟、公司金融
28	何 康	助理教授	博士	金融市场理论	金融市场学、固定收益证券分析
29	杨 惠	助理教授	硕士	国际金融学	国际金融学、国际金融实验
30	罗 斌	副教授	学士	货币金融、货币政策与理论	金融学、中央银行学、投资银行学

七、专业责任教授

序号	姓名	职称	学历学位	专业特长	承担授课课程
1	杨招军	教授	博士	金融工程	金融随机分析

Finance(Financial Engineering)

I . Objectives

“The philosophers have only interpreted the world, in various ways; the point is to change it.” (Karl Marx, Theses On Feuerbach; Thesis 11, 1845). For better or worse, Financial Engineering has changed the world fundamentally -and will keep changing it. This is why it is important to understand how does Financial Engineering work, and what can it do. It is also important to understand certain important implications of the basic principles of financial engineering and financial economics for the real economy and financial markets. Financial Engineering as a discipline emerged in the 1980s. It is also sometimes referred to as “computational finance,” “financial mathematics,” “mathematical finance,” or “quantitative finance.” It uses the tools of mathematics, statistics, and computing to solve problems in finance. Computational methods and the mathematics behind them have become an indispensable part of the finance industry. Financial Engineering is a multidisciplinary field integrating financial theory with economics, methods of engineering, tools of mathematics and practice of programming. This program was founded because recruiters sought undergraduates with skills in the same key areas of finance, mathematics, statistics and programming as they desired at the Master’s level. The concentration is designed to provide training in the application of engineering methodologies and quantitative methods to finance. Graduates will be prepared for diverse career paths such as competent managers and researchers in association with finance, and risk management, and other business management in financial institutions, business enterprises, as well as other related fields.

II . Basic Requirements

Students are required to be equipped with the following abilities: an ability of analyzing macro-economy; an ability of dealing with problems in financial accounting; an ability of managing financial risks; a capacity of analyzing asset pricing; an ability of conducting financial trades; an ability of doing quantitative scientific researches; sound humanistic qualities.

III . Characteristics

Strong background in mathematical and computational application, with the characteristics of developing applicative, innovative and internationalized professionals, and the concentration of promoting the interdisciplinary training.

IV . Program Structure, Graduation Regulations and Admission to the Degree

1. The standard duration of the program is 4-year with flexible 3—6 academic years to complete the curriculum.

2. The program comprises a minimum of 160 credits as following:

Course Category	Required General Courses	Disciplinary Core Courses	Domain Core Courses	Professional Core Courses	Disciplinary Electives	General Electives	Intensive Practice	Total
Credit	27	29	30	24	21	8	21	160

3. To be eligible for admission to the degree of Bachelor of Economics, students have to satisfy all the requirements of the curriculum and any additional required curriculum which has no credit in accordance with the degree granting related documents.

V. The Curriculum and Credit Distribution

1. General Education Courses [required 27+(6) + elective 8 credits]

The general education courses consist of required courses and elective courses. General education electives are designed according to the *Curriculum Design of General Education Electives of Hunan University*. Required general education courses are illustrated in the following table.

Code	Course Title	Credit(s)	Remarks
GE01101	Introduction to Maoism and Theoretical System of Socialism with Chinese Characteristics	3+(3)	
GE01039	Moral Cultivation and Law Basics	1.5+(1.5)	
GE01100	Current Situation and Policies	0.5+(1.5)	
GE01102	Outline of Modern Chinese History	2	
GE01103	Fundamentals of Marxism I	2	
GE01104	Fundamentals of Marxism II	2	
GE01012(-15)	College English	8	
GE01088	Computer Proficiency Test	0.5	
GE01105	Introduction to Computer Science and Programming	2.5	
GE01107(-13)	Psychological Health & Career Planning	1	
GE01089(-92)	Physical Education	4	

2. Disciplinary Core Courses (29 credits)

Disciplinary Core Courses (29 credits)

Code	Course Title	Credit(s)	Remarks
GE03035(-37)	Mathematical Analysis B (I , II , III)	15	
GE03030	Advanced Algebra B	5	
GE03039	Microeconomics	4	
GE03040	Macroeconomics	4	

3. Domain Core Courses (30 credits)

Domain Core Courses (30 credits)

Code	Course Title	Credit(s)	Remarks
ET04009	Basic Accounting	3	
ST03003	Probability Theory	4	
FI04002	Finance	4	
FI04013	Management	3	
FI05020	Operations research	3	
ST04006	Statistics	4	
FI04008	Dynamic programming and stochastic control	3	
ST04008	Mathematical Statistics	3	
BA04043	Ordinary differential equation A	3	

4. Professional Core Courses (24 credits)

Professional Core Courses (24 credits)

Code	Course Title	Credit(s)	Remarks
FI05028	Stochastic Calculus for Finance	3	
FI04005	International Finance	3	
FI04012	Investment (Investment in Securities)	3	
FI05011	Corporate Finance	3	
FI05026	Financial Engineering	3	
FI05027	Financial Econometrics	3	
FI04011	Risk Management (Finance)	3	
FI05030	Pricing and Management of Financial Derivatives	3	

5. Disciplinary Electives (21 credits)

Disciplinary Electives (21 credits)

Code	Course Title	Credit(s)	Remarks
FI06079	Numerical Methods in Computation	3	
BA06211	Economic Law	2	
FI06085	Asset Pricing Theory	3	
ST06002	Statistic Software Application	2	
FI05025	Portfolio Management	3	
FI05013	Portfolio Investment and Management	2	
FI06012	Personal Finance	2	
FI06078	Real Options	2	
FI06013	Fixed Income Securities	2	
FI06051	Security Investment Analysis	2	
FI06026	Experimental Analysis of Financial Transaction Technology	1	
FI05014	Business Bank Management	3	
FI06088	Database Theory and Application	3	
FI05009	Central Banking	3	
FI06028	Financial Marketing	2	
FI06038	Simulation Commercial Bank Business	1	
FI06069	Wealth Management	2	
FI06025	Financial Supervision	2	
FI06077	Quantitative Investment	3	
FI06044	Investment Banking	3	
FI06071	Internet Finance	2	
FI06086	The Finance World (Professional Introductory Course)	1	
FI06073	Financial Innovation and Development (Senior Seminar)	1	

Note: Students are encouraged to sign up for elective courses within and across their majors, with the credit hours no less than 50% of the total required credit hours.

6. Intensive Practice (21 credits)

Intensive Practice (21 credits)			
Code	Course Title	Credit(s)	Remarks
GE01040	Military Training	0	
GE09002	Simulation Platform and Practice Application	2	
GE09028	English Writing	1	
GE09030	Chinese Writing	1	
GE09024	Engineering Practice	1	
FI10033	Social Surveys	1	
FI10027	Simulation Experiment I	1	
FI10028	Simulation Experiment II	1	
FI10029	Simulation Experiment III	1	
FI10026	Graduation Practice	2	
FI10025	Dissertation	10	

Note: To encourage students to actively participate in extracurricular activities, students get 1 credit for any of the following activities; the approval and completion of a national, or provincial or university SIT project, winning an award of the national or provincial "Challenge Cup", participating the College Summer Social Survey Competition organized by Chinese Financial Education Development Fund, getting a paper published, participating a teacher's project, participating a social practice or investigation and submitting a report.

VI. Faculties

No.	Name	Academic Title	Educational Background	Research Areas	Courses (Disciplinary Core Courses, Disciplinary Electives, General Electives)
1	Yang Zhaojun	Professor	Ph. D	Financial Engineering	Stochastic Calculus for Finance
2	Cai Xiaochun	Professor	Ph. D	econometrics	Econometrics for Finance
3	Hu Zongyi	Professor	Ph. D	Mathematical Finance, Computable Equilibrium Model	Numerical Methods in Computation
4	He Pingping	Associate Professor	Ph. D	Internet Finance and Insurance	Internet Finance
5	Li Haiqi	Associate Professor	Ph. D	Econometrics	Risk Management for Finance, Asset Pricing theory
6	Hu Rongcai	Associate Professor	Ph. D	Mathematical Finance	Operations Research
7	Chen Yong	Associate Professor	Ph. D	Financial Engineering	Financial Engineering, Wealth Management
8	Tan Dejun	Associate Professor	Ph. D	Quantitative Finance	Mathematical Statistics
9	Liu Zaihua	Associate Professor	Ph. D	The Methods of Financial Engineering	Game Theory
10	Ma Yong	Assistant Professor	Ph. D	Financial Engineering	Dynamic Programming and Stochastic Control, Quantitative Investment

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No.	Name	Academic Title	Educational Background	Research Areas	Courses (Disciplinary Core Courses, Disciplinary Electives, General Electives)
11	Song Dandan	Assistant Professor	Ph. D	Mathematical Finance	The Pricing and Management of Financial Derivatives
12	Kong Zhizhou	Lecturer	M. S.	Data Mining and Statistical Software	Data Mining Technology, Statistical Software Application
13	Liu Yi	Associate Professor	Ph. D	Theory of Financial Markets, Derivatives Business and Investment	Investment, Derivative Financial Instruments, Investment Banking
14	Wu Wei	Associate Professor	Ph. D	Financial Markets Theory, Security Investment	Portfolio Investment and Management, Securities Investment Analysis, Technical Analysis Experiment of Financial Transactions
15	Zhou Zaiqing	Associate Professor	Ph. D	Personal Finance, Bank Accounting	Personal Finance, Bank Accounting, Management of Commercial Banks
16	Lu Guoqing	Associate Professor	Ph. D	Securities Investment Analysis	Analysis Experiment of Financial Transactions, Securities Investment Analysis
17	Wang Tianyi	Assistant Professor	Ph. D	Theory of Financial Markets, Analysis of Financial Investment Instruments	Security Investment, Excel Financial Modeling, History of Financial Theory
18	Zhang Lei	Assistant Professor	Ph. D	International Finance, Financial Marketing Theory	Finance, Foreign Exchange Trading Theory and Practice
19	Xiao Bailong	Lecturer	Ph. D	Mathematical Statistics	Mathematical Statistics, Nonparametric Statistics, Random Process
20	Dai Xiaofeng	Professor	Ph. D	Financial Investment, Financial Derivatives	Derivative Financial Instruments, Portfolio Investment and Management
21	Zhou Hongwei	Professor	Ph. D	Financial Engineering, Banking Management	Management of Commercial Banks, Technical Economy and Project Evaluation
22	Shao Xinli	Associate Professor	M. S.	International Finance, International Payments Management and Trading Technology	International Finance, International Settlements, International Financial Experiment
23	Yan Yanyang	Professor	Ph. D	Corporate Finance, Financial Marketing Theory	Investments (Security Investments), Corporate Finance
24	Peng Jiangang	Professor	Ph. D	Bank Management, Financial Engineering	Management of Commercial Banks, Technical Economy and Project Evaluation

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No.	Name	Academic Title	Educational Background	Research Areas	Courses (Disciplinary Core Courses, Disciplinary Electives, General Electives)
25	Long Haiming	Professor	Ph. D	Economic Project Evaluation, Bank Accounting	Technical and Economic Project Evaluation, Management of Commercial Banks, Bank Accounting
26	Zhang Xuetao	Associate Professor	M. S.	Marketing	Financial Marketing, Management of Commercial Banks
27	Wang Xiuhua	Associate Professor	Ph. D	Banking Business and Management	Management of Commercial Banks, Corporate Finance, Commercial Banking Business Simulation
28	He Kang	Assistant Professor	Ph. D	Theory of Financial Markets, Security Investment	Security Investment, Excel Financial Modeling, Portfolio Management
29	Yang Hui	Assistant Professor	M. S.	International Finance	International Finance, International Financial Experiment
30	Luo Bin	Associate Professor	B. S.	Currency and Finance, Monetary Policy and Theory	Finance, Central Banking, Financial Regulations

VII. Responsible Professor

No.	Name	Academic Title	Educational Background	Research Areas	Courses (Disciplinary Core Courses, Disciplinary Electives, General Electives)
1	Yang Zhaojun	Professor	Ph. D	Financial Engineering	Stochastic Calculus for Finance

(翻译人:杨招军)