

# 财务管理（金融工程）

## 一、培养目标

本专业培养掌握经济、金融、数理，管理学，信息科学等方面的基础知识，掌握金融工程原理和方法，具有运用金融工程技术解决实际问题的能力，具有国际视野和创新精神，为银行、证券、保险等金融机构，企业以及政府部门培养金融风险管理，创新性金融产品的设计、开发及应用，能“面向现代化，面向世界，面向未来”的复合应用型高级专门人才，同时为学生进一步深造学习奠定基础。

## 二、基本规格要求

本专业学生应学习金融工程学的基础知识，强调实践内容与理论内容相结合，注重基本技能与综合应用能力两方面实践，突出实践内容的技术性、综合性和探索性。

毕业生应获得以下几方面的知识和能力：

### （一）知识要求

1. 熟悉与金融工程专业密切相关的数学、经济学、金融学、会计学、管理学等学科的基础知识；
2. 掌握定性分析与定量分析相结合的科学研究方法与技能，具有扎实的数学、计量经济学基础，掌握基本的数学建模技巧和进行金融市场实证研究的知识；
3. 具有较好的英语读写能力，能熟练地查阅英文文献。

### （二）能力要求

1. 掌握金融工程理论与实务，熟悉金融工程领域发展动态，具有较强的学习能力、写作能力、语言表达能力、人际沟通和跨文化交流能力，以及计算机和信息技术应用等方面的基本能力；
2. 注重与计算机技术、管理、工程学等其他学科或专业的交叉，具有较强的金融分析能力、金融创新能力和实践应用能力。

### （三）素质要求

掌握企业（个人）投资和融资、金融产品的设计、金融工程软件操作等方法或技能，具有创新型金融手段的设计、开发与实施能力，并具备产品定价和风险管理等方面的基本素质。

## 三、培养特色

### 1. 突出用数量分析实际问题能力的培养

在对金融工程基础知识之上，在三个方面加强实际问题能力的培养。第一是突出学生金融定量分析，数理分析能力培养。为此，开设数学分析、高等代数、概率论、数理统计、应用统计学、应用随机过程、常微分方程等课程；第二是突出财务和会计知识的培养，为此，开设了会计学和管理学的课程；第三是突出信息工程技术在现代金融工程中越来越重要的地位，培养学生获取金融信息和处理信息的能力，开设了数据结构与算法分析、数据库原理与应用、数据库与原理等课程。

### 2. 突出金融创新能力培养

注重国际视野的培养，体现在教科书和相关课程及培训上。比如，对于金融工程专业本科人才培养，强调采用新版英文原版教科书、双语教学，部分课程采用全英文教学。在实践中培养学生的创新能力，为此，开设了计算机仿真与模拟，证券投资模拟实验，金融工程计算实验等课程。

## 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, 按照学分制度管理。
2. 学生毕业最低学分数为 170 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	25	29	26	30	26	8	26	170

3. 学生修满培养方案规定的课程及有关实践环节, 达到规定的最低毕业学分数, 德、智、体合格, 即可毕业。满足学位授予相关文件要求的, 授予管理学学士学位。

## 五、课程设置及学分分布

### (一) 通识教育课程〔必修 25+ (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	
GE01103	马克思主义基本原理 (上)	2	
GE01012 (-15)	大学英语	8	
GE01088	计算机基本能力测试	0.5	
GE01093	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 (29 学分)

编码	课程名称	学分	备注
GE03035 (-37)	数学分析 B	15	
GE03030	高等代数 B	6	
GE03015	微观经济学	4	
GE03016	宏观经济学	4	

### (三) 学类核心 (26 学分)

编码	课程名称	学分	备注
BA04039	概率论	4	
BA04040	数理统计	4	
EN04005	应用统计学	3	
BA04043	常微分方程 A	3	
BA04022	管理学	3	
BA04023	会计学原理	3	
BA04020	财务管理学	3	
BA04030	运筹学	3	

**(四) 专业核心 [30+ (1) 学分]**

编码	课程名称	学分	备注
BA05105	金融学	3	
BA05106	金融工程概论	3	
BA05107	金融市场学	3	
BA05115	金融计量学	3	
BA05116	金融经济学	3	
BA05117	金融风险管理	3	
BA05118	国际金融 (S)	3	
BA05119	投资学	3	
BA05120	随机过程	3	
BA05121	金融衍生工具 (S)	3	
BA01001 (02)	专业导论课	0+ (1)	专题讲座

**(五) 专业选修 (选修 26 学分)**

编码	课程名称	学分	备注
BA06242	数据结构与算法分析	2	
BA06171	数据库原理与应用	2	
BA06140	管理信息系统	2	
BA06128	博弈论	2	
BA06243	最优化理论与方法 A	2	
BA06174	投资项目分析	2	
BA06172	实变函数与泛函分析	3	
BA06245	数值计算方法	2	
BA06169	时间序列分析	2	
BA06138	固定收益证券	2	
BA06186	信用风险建模及信用衍生品 (S)	2	
BA06177	外汇交易理论与实务 (S)	2	
BA06152	金融数据挖掘 (S)	2	
BA06237	债券理论与实务	2	
BA06150	金融工程数据分析	2	
BA06246	偏微分方程 A	3	
BA06236	公司金融 (S)	2	
BA06149	计算金融学	2	
BA06145	行为金融学	2	
BA06188	银行经营管理	2	
BA06176	投资银行学	2	
BA06247	经济法	2	
BA06147	计算机仿真与模拟	2	

**(六) 集中实践 (26 学分)**

编码	课程名称	学分	备注
GE01040	军事理论	0	
GE09024	工程认识实习 A	1	
GE09030	中文写作实训	1	
GE09001	程序设计训练	2	
BA10043	证券投资模拟实验	2	
BA10035	金融工程计算实验	2	
BA10040	学年论文	2	
BA10044	专业实习	2	
BA10033	导师课程	2	
BA10032	毕业实习	2	
BA10031	毕业论文（设计）	10	

\*注：1) 课程名称后标注(S)系指该课程采用双语讲授。

2) 在读期间参加学科竞赛或征文获奖、公开发表学术论文等经学院认定（详见《湖南大学工商管理学院实践创新学分认定标准》）可以替代专业选修学分，但最高不超过4个学分。

3) 学生可以到本校计算机、经管、法学、数学、文学等学类内选修相关课程，所获学分计入专业选修课内，但最多不超过10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	周忠宝	教授	博士	金融工程与风险管理	运筹学、金融工程数据分析、投资学
2	曾志坚	副教授	博士	金融工程与风险管理	金融市场学、金融风险管理、应用统计学、管理学、信用风险建模及信用衍生品
3	马超群	教授	博士	金融工程与风险管理	金融计量学、运筹学、投资学
4	谢 赤	教授	博士	金融工程与风险管理	金融市场学、金融风险管理
5	朱慧明	教授	博士	金融工程与风险管理	随机过程、金融计量学、应用统计学、时间序列分析
6	孙耀吾	教授	博士	公司治理、创新管理	管理学
7	张跃军	教授	博士	金融工程与风险管理	时间序列分析
8	巢剑雄	教授	硕士	金融工程与风险管理	运筹学、应用统计学
9	陈立勇	副教授	博士	技术创新与管理	管理学
10	汪 忠	副教授	博士	创新与创业管理	管理学
11	吴 晓	副教授	博士	金融工程与风险管理	金融学、管理学、金融工程概论、金融衍生工具(S)、外汇交易理论与实务(S)
12	杨 宽	副教授	博士	金融工程与风险管理	投资学、应用统计学、管理学
13	杨 超	副教授	博士	金融工程与风险管理	计算金融学、金融数据挖掘(S)、应用统计学、运筹学
14	邹 琳	讲师	博士	金融工程与风险管理	金融计量学、时间序列分析、应用统计学、运筹学、金融工程概论
15	徐 艳	讲师	博士	金融工程与风险管理	国际金融(S)、外汇交易理论与实务(S)、应用统计学、管理学
16	刘梦麒	讲师	博士	金融工程与风险管理	银行经营管理、投资项目分析、管理学、运筹学、金融经济学、投资银行学
17	贺红波	讲师	博士	金融工程与风险管理	金融学、行为金融学、应用统计学、管理学、博弈论

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)
18	姚 铮	讲师	博士	金融工程与风险管理	金融计量学、固定收益证券、应用统计学、管理学、金融工程概论
19	周 科	讲师	博士	金融工程与风险管理	信用风险建模及信用衍生品 (S)、应用统计学、金融经济学、金融衍生工具 (S)、金融工程数据分析
20	邹自然	讲师	博士	金融工程与风险管理	投资学、博弈论、金融工程数据分析
21	唐京华	讲师	博士	企业融资	公司金融 (S)、投资学、金融经济学、金融衍生工具 (S)
22	王纲金	讲师	博士	金融工程与风险管理投资	国际金融 (S)、外汇交易的理论与实践 (S)、信用风险建模及信用衍生品 (S)、应用统计学、金融经济学、金融衍生工具 (S)

## 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	马超群	教授	博士	金融工程与风险管理	金融计量学、运筹学、投资学

# Financial Management(Financial Engineering)

## I . Objectives

Financial Management(Financial Engineering) is a multidisciplinary field involving economics, finance, mathematics, management science, information science, etc. providing the training of financial engineering principles and methods, enabling the undergraduate the financial engineering techniques to solve practical problems, with international vision and innovative spirit. It is designed for students who wish to obtain positions in for the bank, insurance company and other financial institutions, businesses and government departments, who are skilled in financial risk management, designing, developing and application of innovative financial product, with the value of “toward modernization, the world and the future”. We train the interdisciplinary applied talents, and also lay the foundation for students to who want further study.

## II . Basic Specifications

The students should learn the basics of Financial Management(Financial Engineering), emphasizing the combining practice and theory, focusing on basic skills and comprehensive ability in both practice and technical, highlight the practice, comprehensiveness and exploratory.

The graduates should acquire the following knowledge and abilities:

### 1. Knowledge requirements

(1)Familiar with the basics of financial mathematics, economics, finance, accounting, management and other disciplines;

(2)Master the qualitative analysis and quantitative analysis of the combination of scientific methods and skills, with a solid mathematical foundation of econometric, mathematical modeling techniques and the empirical research in financial markets;

(3)Be good at English reading and writing skills, be proficient in English literature.

### 2. Abilities requirements

(1)Learning ability, basic writing skills, language skills, interpersonal communication and cross-cultural communication, as well as computer and information technology and other aspects; be familiar with recent developments of financial engineering;

(2)Focusing on inter-disciplines cross-computer technology, management, engineering, etc. , with a strong financial analytic skills, financial innovation and application ability.

### 3. Quality Requirements

Master enterprise (individual) investment and financing, financial product design, financial engineering software operating skills, designing and developing and innovative financial instruments, and have the basic quality of product pricing and risk management and other aspects.

## III . Characteristics

### 1. Highlight the quantitative ability to analyze and solve practical problems

(1)Based on diversified course, we strengthen the ability of solving practical problems in three ar-

eas. The first is to highlight student financial quantitative analysis, mathematical analysis ability. To this end, we provide the courses: mathematical analysis, advanced algebra, probability theory, mathematical statistics, applied statistics, stochastic processes, ordinary differential equations, etc;

(2) The second is to train financial and accounting knowledge, and to this end, we provide the accounting and finance management courses;

(3) The third is to highlighting the increasingly important role of information engineering in the modern financial engineering an, students get financial information and the ability to process information, we provide the courses: data structure and algorithm analysis, database theory and application, database and principles courses.

## 2. Highlight Financial Innovation Ability

We pay attention to open the students' international perspective. Reflected in textbooks and related courses, we emphasize the use of original new version English textbooks, bilingual teaching, English teaching. To train students' creative ability in practice, to this end, we provide the courses: computer simulation and modeling, portfolio simulation, financial engineering computational experiment courses.

## IV. Length of Schooling, Basic Requirements for Graduation, and Degree Conferment

1. The length of schooling for undergraduate studies is four years, with a flexible length lasting from 3 to 6 years, based on the regulation of credit system.

2. Students in the program of Financial Engineering are expected to complete a minimum of 170 credits upon graduation, and the required credits for different courses are illustrated in the following table:

Course Category	Required General Education Courses	Introductory Major Courses	Major Survey Courses	Required Core Courses	Restricted Electives	General Education Electives	Intensive Practice-Internship	Total
credit	25	29	26	30	26	8	26	170

Students will graduate until they pass the required courses and related practice courses, and achieve the required minimum number of credits, and morally, intellectually, physically qualified. Satisfying the requirements of degree-granting documents, He/She will be granting bachelor's degree in management.

## V. Curriculum and Credits

1. General Education Courses [required 25 + (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	

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Code	Course Title	Credit(s)	Remarks
GE01103	Fundamentals of Marxism I	2	
GE01012(-15)	College English	8	
GE01088	Computer Proficiency Test	0.5	
GE01093	Introduction to Computer Science and Programming	2.5	
GE01107(-13)	Psychological Health & Career Planning	1	
GE01089(-92)	Physical Education	4	

## 2. Introductory Major Courses(29 credits)

Code	Course Title	Credit(s)	Remarks
GE03035(-37)	Mathematical Analysis B	15	
GE03030	Advanced Algebra B	6	
GE03015	Microeconomics	4	
GE03016	Macroeconomics	4	

## 3. Major Survey Courses (26 credits)

Code	Course Title	Credit(s)	Remarks
BA04039	Probability Theory	4	
BA04040	Mathematical Statistics	4	
EN04005	Applied Statistics	3	
BA04043	Ordinary Differential Equations A	3	
BA04022	Management	3	
BA04023	Accounting Principle	3	
BA04020	Financial Management	3	
BA04030	Operations Research	3	

## 4. Required Core Courses [30+(1) credits]

Code	Course Title	Credit(s)	Remarks
BA05105	Finance	3	
BA05106	Introduction to Financial Engineering	3	
BA05107	Financial Markets	3	
BA05115	Financial Econometric	3	
BA05116	Financial Economics	3	
BA05117	Financial Risk Management	3	
BA05118	International Finance (S)	3	
BA05119	Investments	3	
BA05120	Stochastic Process	3	
BA05121	Financial Derivatives(S)	3	
BA01001(02)	Program Introduction	0+(1)	Lecture

## 5. Restricted Electives (26 credits)

Code	Course Title	Credit(s)	Remarks
BA06242	Data Structure and Algorithm Analysis	2	
BA06171	Database Principles and Applications	2	
BA06140	Management Information System	2	
BA06128	Game Theory	2	
BA06243	Optimization Theory and Method A	2	



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Code	Course Title	Credit(s)	Remarks
BA06174	Analysis of Investment Projects	2	
BA06245	Numerical Method	2	
BA06172	Function of Real Variable and Functional Analysis	3	
BA06169	Time Series Analysis	2	
BA06138	Fixed Income Securities	2	
BA06186	Credit Risk Modeling and Credit Derivatives(S)	2	
BA06177	Forex Theory and Practice(S)	2	
BA06152	Financial Data Mining(S)	2	
BA06237	Bond theory and practice	2	
BA06150	Financial Data Mining (S)	2	
BA06246	Partial Differential Equation A	3	
BA06236	Corporate Finance(S)	2	
BA06149	Computational Finance	2	
BA06145	Behavioral Finance	2	
BA06188	Bank Management	2	
BA06176	Investment Banking	2	
BA06247	Law of Economy	2	
BA06147	Computational Simulation and Modeling	2	

## 6. Intensive Practice-Internship (26 credits)

Code	Course Title	Credit(s)	Remarks
GE01040	Military Theory	0	
GE09024	Practice Teaching A	1	
GE09030	Chinese Writing	1	
GE09001	Programming training	2	
BA10043	Securities Investment Simulation	2	
BA10035	Financial Computational Experiment	2	
BA10040	Term Thesis	10	
BA10044	Specialty Practices-Internship		
BA10033	Tutorials		
BA10032	Graduation Internship		
BA10031	Graduation Thesis		

\* note:1) when marks (s) after the course name, it means this course will be taught in two languages.

2) During a read or participate in academic competitions winning essay, published academic papers identified by the Institute (see "Hunan University School of Business Administration Practice Innovation credits recognized standards") may substitute for professional elective credits, but not exceeding 4 credits.

3) Students can elective courses of computer, administered, law, mathematics, literature and other classes in the school, lessons counted in specialty elective credits, but no more than 10 credits.

## VI. Course Instructor List

No.	Name	Academic Title	Educational Background	Research Areas	Courses
1	Zhou Zhongbao	Professor	Doctor	Financial Engineering and Risk Management Investment	Operations Research, Financial Data Mining (S), Investments
2	Zeng Zhijian	Associate Professor	Doctor	Financial Engineering and Risk Management Investment	Financial Markets, Financial Risk Management, Applied Statistics, Investment, Credit Risk, Modeling and Credit Derivatives
3	Ma Chaoqun	Professor	Doctor	Financial Engineering and Risk Management Investment	Financial Econometric, Operations Research; Investments
4	Xie Chi	Professor	Doctor	Financial Engineering and Risk Management Investment	Financial Markets, Financial Risk Management
5	Zhu Huiming	Professor	Doctor	Financial Engineering and Risk Management Investment	Stochastic Process, Financial Econometric, Applied Statistics, Time Series Analysis
6	Sun Yaowu	Professor	Doctor	Corporate Governance, Innovation Management	Management
7	Zhang Yuejun	Professor	Doctor	Financial Engineering and Risk Management Investment	Time Series Analysis
8	Cao Jianxiong	Professor	Master	Financial Engineering and Risk Management Investment	Operations Research, Applied Statistics
9	Chen Liyong	Associate Professor	Doctor	Technological Innovation and Management Science	Management
10	Wang Zhong	Associate Professor	Doctor	Financial Engineering and Risk Management Investment	Management
11	Wu Xiao	Associate Professor	Doctor	Financial Engineering and Risk Management Investment	Finance, Management Introduction to Financial Engineering Financial Derivatives (S), Forex Trading Theory and Practice(S)
12	Yang Kuan	Associate Professor	Doctor	Financial Engineering and Risk Management Investment	Investment, Applied Statistics, Management
13	Yang Chao	Associate Professor	Doctor	Financial Engineering and Risk Management Investment	Computational Finance, Financial Data Mining (S) Applied Statistics, Operations Research
14	Zou Lin	Lecturer	Doctor	Financial Engineering and Risk Management Investment	Financial Econometric Time Series Analysis, Applied Statistics, Operations Research Introduction to Financial Engineering
15	Xu Yan	Lecturer	Doctor	Financial Engineering and Risk Management Investment	International Finance (S), Forex Trading Theory and Practice(S), Applied Statistics, Management

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No.	Name	Academic Title	Educational Background	Research Areas	Courses
16	Liu Mengqi	Lecturer	Doctor	Financial Engineering and Risk Management Investment	Bank Management, Investment Project Analysis, Management, Operations Research, Economics, Finance, Investment banking
17	He Hongbo	Lecturer	Doctor	Financial Engineering and Risk Management Investment	Finance, Behavioral Finance, Applied Statistics Management, Game Theory
18	Yao Zheng	Lecturer	Doctor	Financial Engineering and Risk Management Investment	Fixed-income Securities, Applied Statistics, Management, Introduction to Financial Engineering
19	Zhou Ke	Lecturer	Doctor	Financial Engineering and Risk Management Investment	Credit Risk Modeling and Credit Derivatives (S), Applied Statistics, Financial Economics, Financial Derivatives (S), Financial data analysis
20	Zou Ziran	Lecturer	Doctor	Financial Engineering and Risk Management Investment	Game Theory, Financial Data Analysis
21	Tang Jinghua	Lecturer	Doctor	Corporate Finance	Corporates Finance (S), Investment, Financial Economics, Financial Derivatives (S)
22	Wang Gangjin	Lecturer	Doctor	Financial Engineering and Risk Management Investment	International Finance (S), Forex Trading Theory and Practice, Credit Risk Modeling and Credit Derivatives (S), Applied Statistics, Financial Economics, Financial Derivatives (S)

## VII. Course Scheduler

No.	Name	Academic Title	Educational Background	Research Areas	Courses
1	Ma Chaoqun	Professor	Doctor	Financial Engineering and Risk Management Investment	Financial Econometric, Operations Research, Investments

(翻译人:周科)