浙江科技学院信息与计算科学专业培养方案

一、培养目标

培养具有良好的数学素养，掌握数学方法和软件工具、数学建模和数值计算等能力，掌握数据管理、数据分析与数据挖掘等技能，掌握应用软件设计与开发、数据处理或金融信息统计分析、精算设计与应用等能力的高素质应用型专门人才；毕业生能胜任信息产业、经济金融等领域的数据处理与计算、应用软件开发或金融市场建模与分析、金融管理与决策等工作，也能在科技、教育等部门从事教学、科研工作，也可进一步攻读数理、信息、计算机、金融等专业的研究生。

本专业毕业生在毕业后5年左右应达到以下目标： 科学文化素养、社会责任感、职业道德、沟通交流能力、团队协作能力等明显提升，能在工作领域内充分展现才能并发挥应有作用，能熟练运用专业知识及技能独立开展工作，并能以技术或管理骨干的角色组织实施团队项目。

二、毕业要求

1、具有良好的人文素养、社会责任感和爱国敬业精神；具有诚信意识，注重职业道德，自觉遵纪守法；具有求真务实精神和严谨的科学素养；具有良好的身体素质，健康的心理素质及良好的行为习惯。
2、具有良好的数学及计算机基础，掌握数学软件（MATLAB等）、数学建模和数值计算方法等基本知识，掌握数据管理、数据分析与数据挖掘的基本技能；应用软件与数据处理模块学生应具有软件开发、数据处理等专业知识及技能，金融精算与统计分析模块学生应具有经济金融、精算、统计等专业知识与方法。
3、具有较强的分析、归纳、抽象、演绎推理、空间想象、科学计算等能力，并具有综合运用所学知识解决实际问题的能力，应用软件与数据处理模块学生应具有一定的程序设计、软件开发、数据处理等能力，金融精算与统计分析模块学生应具有一定的金融信息处理、精算设计与应用、统计分析等能力。
4、具有文献检索、资料查询及运用现代信息技术获取相关信息的能力。
5、具有阅读外文文献和用外语进行简单交流的能力，具有一定的文学、哲学、历史、经济等人文社科知识及自然科学知识。
6、具有较强的创新创业精神和创新意识，具有自主学习和终身学习的意识，有不断学习和适应发展的能力。
7、具有一定的组织能力和良好的表达能力、较强的人际交往能力和团队合作能力。

三、毕业要求达成矩阵

毕业要求	指标点	相关教学活动	学生考核方式
毕业要求1	1.1 具有良好的人文素养、社会责任感和爱国敬业精神；具有诚信意识，注重职业道德，自觉遵纪守法。	大学始业教育、中国近现代史纲要、思想道德修养与法律基础、马克思主义基本原理概论、毛泽东思想和中国特色社会主义理论体系概论、形势与政策、思政社会实践等	课程平时考核及期末考核
	1.2 具有求真务实精神和严谨的科学素养。	各门专业课程的教学	
	1.3 具有良好的身体素质，健康的心理素质及良好的行为习惯。	军事理论及训练、体育健康训练、大学生心理健康教育等	课程平时考核及期末考核
	2.1 具有良好的数学及计算机基础，掌握数学软件（MATLAB等）、数学建模和数值计算方法等基本知识。	数学分析、高等代数与解析几何、常微分方程、概率论、数理统计、程序设计与算法语言、离散数学、复变与实变、MATLAB与科学计算实验、最优化方法、数值计算方法、数学建模实训等	课程平时考核及期末考核

毕业要求2	2.2 掌握数据管理、数据分析与数据挖掘的基本技能。	数据结构、数据库原理、数据分析、数据挖掘技术、R语言与统计计算等	课程平时考核及期末考核
	2.3 应用软件与数据处理模块学生应具有软件开发、数据处理等专业知识及技能。	Java程序设计、计算机组成、Web程序设计、操作系统原理、信息系统分析与设计、软件工程、软件开发集成技术、Python数据处理、机器学习、计算机网络等	课程平时考核及期末考核
	2.4 金融精算与统计分析模块学生应具有经济金融、精算、统计等专业知识与方法。	西方经济学、金融学、精算学、随机过程、金融数学、精算风险理论、计量经济学、证券投资分析、预测与决策等	课程平时考核及期末考核
毕业要求3	3.1 具有较强的分析、归纳、抽象、演绎推理、空间想象、科学计算等能力，并具有综合运用所学知识解决实际问题的能力。	2.1中的课程、各项实践、第二课堂、技术实习、毕业设计（论文）等	课程平时考核、期末考核及答辩
	3.2 应用软件与数据处理模块学生应具有一定的程序设计、软件开发、数据处理等能力。	2.3中课程、移动应用软件设计、Linux系统实践、应用软件项目综合实训、大数据处理实验、第二课堂、技术实习、毕业设计（论文）等	课程平时考核、期末考核及答辩
	3.3 金融精算与统计分析模块学生应具有一定的金融信息处理、精算设计与应用、统计分析等能力。	2.4中课程、大数据处理实验、精算设计、统计实践、计算机财务实践、第二课堂、技术实习、毕业设计（论文）等	课程平时考核、期末考核及答辩
毕业要求4	具有文献检索、资料查询及运用现代信息技术获取相关信息的能力。	文献检索讲座、课程论文、第二课堂、技术实习、毕业设计（论文）等	答辩
毕业要求5	5.1 具有阅读外文文献和用外语进行简单交流的能力。	大学英语、工程师英语、英语等级考试、双语课程、技术实习、毕业设计（论文）等	课程平时考核、期末考核及答辩
	5.2 具有一定的文学、哲学、历史、经济等人文社科知识及自然科学知识。	大学语文、自然科学拓展、人文素质拓展、经济与管理、艺术与美学、大学物理C、大学物理实验B等	课程平时考核、期末考核
毕业要求6	6.1 具有较强的创新创业精神和创新意识。	创业基础、大学生职业发展与就业指导及实践、各类学术创新论坛与讲座、创新性开放实验、学科竞赛、课外科技活动、创新创业实践、技术实习、毕业设计（论文）等	课程平时考核、期末考核及答辩
	6.2 具有自主学习和终身学习的意识，有不断学习和适应发展的能力。	大学始业教育及各课程的学习指导等	
毕业要求7	具有一定的组织能力和良好的表达能力、较强的人际交往能力和团队合作能力	学科竞赛、课外科技活动、思政社会实践、学生社团、班级管理、志愿者活动等	

四、主干学科

数学、计算机科学与技术、金融学。

五、专业核心课程

程序设计与算法语言、离散数学、数据结构、数值计算方法、数据库原理、数据分析、最优化方法、复变与实变等。

六、主要实践环节

认识实习、课程设计、数学建模实训、技术实习、毕业设计(论文)等。

七、学制、学位及毕业学分要求

1．学制：实行弹性学制，本科基本学制一般为4年，可提前1年毕业，最长不超过8年。
2．授予学位：授理学学士学位。
3．本专业毕业最低学分要求：175学分。

八、学分结构要求

课程设置及修读类型			学分及占比	
			学分	学分比例
理论教学环节	通识教育课	必修	33	18.9%
		选修	8	4.6%
	学科专业类基础课	必修	26.5	15.1%
	专业核心课（必修）		19.5	11.2%
	拓展复合课（选修）		24.5	14.0%
	小计		111.5	63.7%
实践教学环节	必修		63.5	36.3%
合计			175	100.0%

Undergraduate Program in Information and Computing Science

I. Educational Objectives

The specialty is designed to give students a solid understanding of mathematical knowledge, to grasp mathematical methods and software tools, mathematical modeling and numerical calculation, to master data management, data analysis and data mining skills, to master the applications of software design and development, data processing, financial information statistics, actuarial design and application, and so on the high-quality applied abilities. The training can qualify the students to work in various fields, such as the information industry, economic and financial, jobs like data processing and computing, application software development, financial market modeling and analysis, financial management and decision-making, as well as in science and technology, education and other departments engaged in teaching and research work. In addition, the students can further study for mathematics, computer, information, financial and other professional students.

After graduation 5 years, the students should achieve the following objectives: scientific literacy, social responsibility, occupation morality, communication ability, and teamwork ability have been improved significantly, can work in the various fields with good-developed abilities and play an important role, can skilled use of professional knowledge and work independently, and organize and implement the team projects as the role of technical or managerial backbone.

II. Graduation Requirements

1. To have a good humanities and social responsibility and patriotic spirit; to obtain integrity awareness, the occupation morality, consciously abide by the law; to achieve the pragmatic spirit and scientific literacy; to have good physical quality, psychological quality and good behavior habit.
2. To have the good foundation of mathematics and computer, mathematics software (MATLAB), the basic knowledge of mathematical modeling and numerical calculation method, to master the fundamental skills of data management, data analysis and data mining. For the students from Application software and data processing module, they should have the software development, data processing and other professional knowledge and skills, for the students from Financial actuarial and statistical analysis module, they should have economic and financial, actuarial, statistical and other professional knowledge and methods.
3. To have strong analysis, induction, abstraction, deductive reasoning, spatial imagination and scientific computing ability, and to have the ability to use the knowledge to solve practical problems. For the students from Application software and data processing module, they should have the ability of programming, software development, data processing, for the students from Financial actuarial and statistical analysis module, they should have the ability of information processing, design and application of actuarial, statistical analysis.
4. To have the ability of literature search, data query and the use of modern information technology to obtain relevant information.
5. To have the ability to read foreign literature and communicate in a foreign language, to have a certain knowledge of literature, philosophy, history, economy, etc..
6. To have a strong sense of innovation and entrepreneurship and innovation, to have independent learning and lifelong learning awareness, to have the ability to learn and adapt to the developing environment.
7. To have certain organization ability and good communication ability, good interpersonal skills and team cooperation ability.

III. Achievement Matrix of Graduation Requirements

Graduation Requirements	Indicators of Graduation Requirements	The Main Courses and Programs	Assessment

Graduation Requirements 1	1.1 Have good humanistic quality, social responsibility and patriotic spirit, have integrity awareness and the occupation morality, and consciously abide by the law.	Induction of university life, Outline of Contemporary Chinese History, Fundamentals of Morality and Law, Introduction to Fundamental Principles of Marxism, Introduction to Mao Zedong's Thought and Theoretical System of Socialism with Chinese Characteristics, Situation and Policy, Ideological Social Practice, etc.	Course assessment and final assessment
	1.2 Have the spirit of seeking truth from facts and rigorous scientific literacy.	the teaching of various professional courses	
	1.3 Have good physical quality, healthy psychological quality and good behavior habits.	Military Theory and Training, Health Training, Mental Health Education for College Students, etc.	Course assessment and final assessment
Graduation Requirements 2	2.1 Have in depth knowledge of Mathematic and Computation, master software (MATLAB, etc.), and have the fundamental knowledge of mathematical modeling and numerical calculation methods, etc.	Mathematical Analysis,Advanced Algebra and Analytic Geometry, Ordinary Differential Equations, Probability Theory, Mathematical Statistics, Program Design and Algorithm Language, Discrete Mathematics, Matlab and Science Computing Experiment, Methods of Optimization, Numerical Computation Method, Mathematical Modeling Training, etc.	Course assessment and final assessment
	2.2 Have the fundamental skills of data management, data analysis and data mining.	Data Structures, Database Principle, Data Analysis, Data Mining, Statistical Computing with R, etc.	Course assessment and final assessment
	2.3 For the students from Application software and data processing module, have the in depth knowledge and skills of software development, data processing, etc.	Java Programming, Computer Organization, Web Programming, Principles of Operating System, Information Systems Analysis and Design, Introduction to Software Engineering, Software Development Integration Technology, Data Processing with Python, Machine Learning, Computer Networks, etc.	Course assessment and final assessment
	2.4 For the students from Financial actuarial and statistical analysis module, have the in depth knowledge and methods of economic and financial, actuarial, statistical, etc.	Economics, Principles of Finance, Actuarial Science, Stochastic Process, Financial Maths, Actuarial Risk Theory, Econometrics, Analysis of Securities Investment, Forecast and Dedision-Making, etc.	Course assessment and final assessment
	3.1 Have the ability of strong analytical, inductive, abstract, deductive reasoning, spatial imagination, scientific computing, and apply the knowledge to solve practical problems.	courses in 2.1, projects, Extracurricular Teaching, Technology Practice, Undergraduate Thesis, etc.	Course assessment，final assessment，thesis oral defense

Graduation Requirements 3	3.2 For the students from Application software and data processing module, have the ability of programming, software development, data processing, etc.	courses in 2.3, Mobile Application Software Design, Practice of Linux System, Comprehensive Training in Application Software Project, Big Data Processing Experiment, Extracurricular Teaching, Technology Practice, Undergraduate Thesis, etc.	Course assessment，final assessment，thesis oral defense
	3.3 For the students from Financial actuarial and statistical analysis module, have the ability of financial information processing, actuarial design and application, statistical analysis, etc.	courses in 2.4, Big Data Processing Experiment, Actuarial Design, Statistical Practice, Extracurricular Teaching, Technology Practice, Undergraduate Thesis, etc.	Course assessment，final assessment，thesis oral defense
Graduation Requirements 4	Have the ability of literature search, data query, and the technology to obtain relevant information.	Literature retrieval seminars，assignments，Extracurricular Teaching, Technology Practice, Undergraduate Thesis, etc.	thesis oral defense
Graduation Requirements 5	5.1 Have the ability to read foreign language documents and communicate in English.	College English，Engineer English，English proficiency test，Bilingual course，Technology Practice, Undergraduate Thesis, etc.	Course assessment，final assessment，thesis oral defense
	5.2 Have a certain knowledge of literature, philosophy, history, economy and other humanities, social science, etc.	College Chinese, Natural Science development, Economy and Management, Art and Resthetics, College Physics C, Physical Experiment of college B, etc.	Course assessment，final assessment，thesis oral defense
Graduation Requirements 6	6.1 Have strong entrepreneurial spirit and sense of innovation.	Entrepreneurial Fundamental, Career planning and guidance for college students practice, academic innovation forum and seminars, innovative open experiment, academic competitions, extracurricular activities of science and technology, technology innovation, Technology Practice, Undergraduate Thesis, etc.	Course assessment，final assessment，thesis oral defense
	6.2 Have the ability of independent learning, lifelong learning awareness, learning and adapting to development.	Induction of university life and guidens for various courses.	
Graduation Requirements 7	Have certain ability of organization, good communication skills, strong interpersonal skills, team working.	Competitions, extracurricular science and technology activities, ideological and political social practice, student associations, class management, volunteer activities, etc.	

IV. Major Disciplines

Mathematics, Computer Science and Technology, Finance

V. Core Courses

Program Design and Algorithm Language,Discrete Mathematics, Data Structures, Numerical Computation Method, Database Principle, Data Analysis, Methods of Optimization, Function of Complex and Real Variable, and so on.

VI. Internship and Practice

Cognition Practice, Integrated Course Design, Practice of Mathematical Modeling Training, Technology Practice, Undergraduate Thesis, and so on.

VII. Duration of Schooling, Degree and Credits Requirements for Graduation

1．Duration of Schooling：The duration of schooling is flexible, generally it lasts four years. The students can graduate one year in advance or within 8 years.

2．Degree Conferred：Bachelor's degree in Science

3．The Minimum Graduation Credits：175

VIII．Credits Structure and Ratio：

The curriculum Provision and Study Type			Credits	Credits Ratios
Theory Teaching	General Education Courses	Required	33	18.9%
		Optional	8	4.6%
	Discipline & Specialty Basic Courses	Required	26.5	15.1%
	Specialty Core Courses （Required）		19.5	11.2%
	Expand and Recombination Courses （Optional）		24.5	14.0%
	Subtotal		111.5	63.7%
Practice Teaching	Required		63.5	36.3%
Total			175	100%

课程设置与学时安排（表一）

专业名称：信息与计算科学

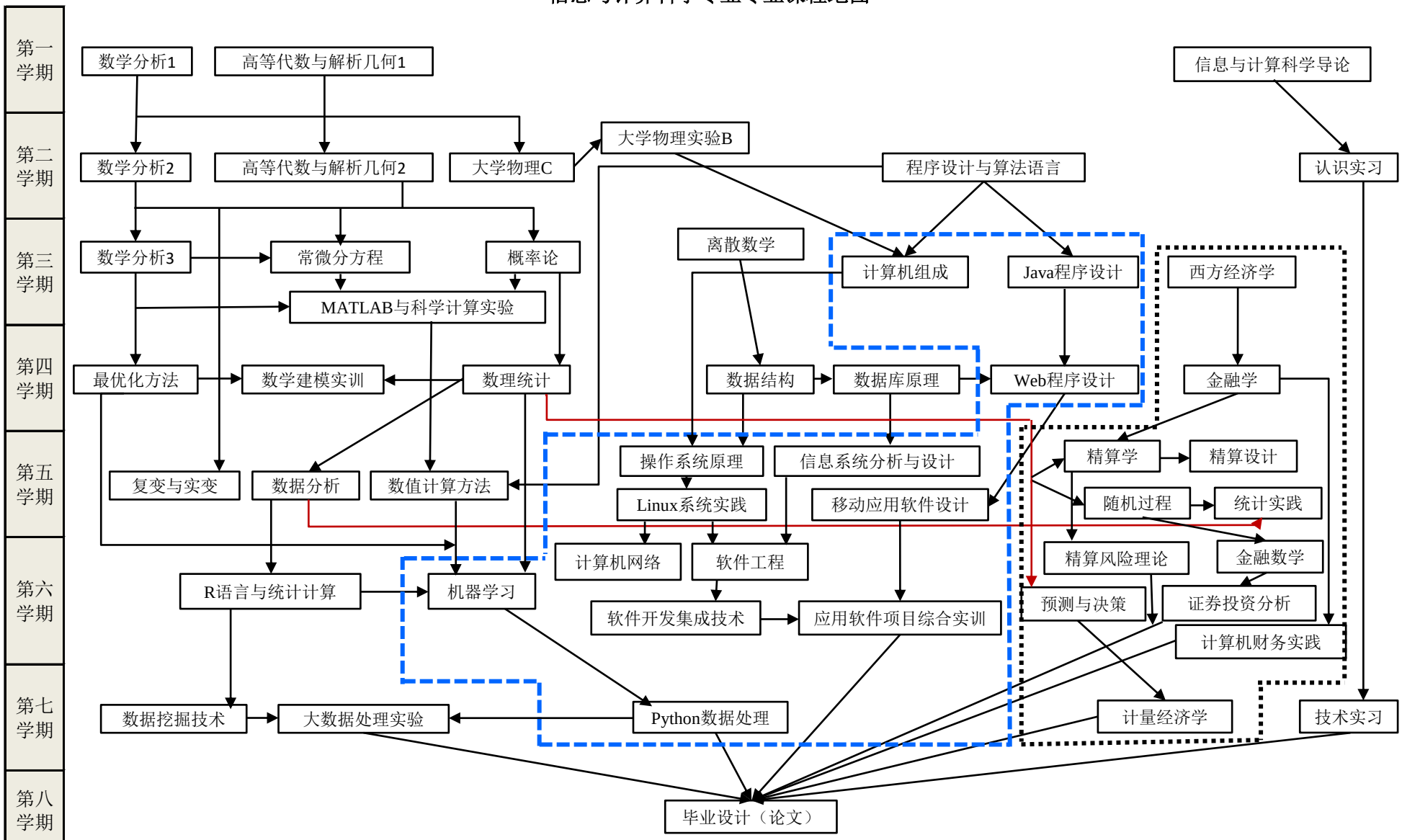
课程类别	课程性质		课程代码	课程名称	学分	总学时	教学安排					考试学期	各学期周学时分配								备注
							理论学时	实验实践学时	习题学时	研讨学时	课外学时		第一学年		第二学年		第三学年		第四学年		
													长1	长2	长3	长4	长5	长6	长7	长8	
													16周	16周	16周	16周	16周	16周	16周	16周	
通识教育课程	思政类	必修	2615A078	中国近现代史纲要 Outline of Contemporary	2	32	24	2	2	4		2		2							
			2615A079	思想道德修养与法律基础 Fundamentals of	3	48	36	2	4	6		1	3								
			2615A080	马克思主义基本原理概论 Introduction to	3	48	36	2	4	6		4				3					
			2615A081	毛泽东思想与中国特色社会主义理论体系概论 Introduction to Mao Zedong's Thought and Theoretical System of Socialism	4	64	48	4	4	8		3			4						
			26115201-26115204	形势与政策 Situation and Policy	2	32	32						长1-4讲座								
	外语类	必修	5214A001 5214A002 5214A004 5201A005	大学英语2-3 工程师英语1-2 College English 2-3 Engineer English 1-2	10	160	124		18	18	160	1-4	3	3	2	2					实施分级教学2选1
			5214A002 5214A003 5214A004 5201A005	大学英语3-4 工程师英语1-2 College English 3-4 Engineer English 1-2	10	160	124		18	18	160	1-4	3	3	2	2					
	体育类	必修	1316A007-1316A010	体育1-4 Physical Education 1-4	4	144		144				1-4	2	2	2	2					体育俱乐部形式
	数理基础类	必修	1012A112	大学物理C College Physics C	4	64	36		18	10	64	2		4							
	创新创业类	必修	3717A039	创业基础 Entrepreneurial Fundamental	2	32	26			6	16		2								
	文化素质类	必修	5115A087	大学语文 College Chinese	2	32	10	6	4	12			2								
	健康就		2717A122	大学生心理健康教育 Mental Health Education for	1	16	8		4	4		1	2								

	业指导	必修	31117082-31117083	大学生职业发展与就业指导 1-2 Career Planning and Guidance for College Students Practice 1-2	1	16	16								讲座			讲座			
	素质选修课		8个学分必修，课程选修	自然科学拓展及工程技术拓展之外的课程群至少选修6个学分	6	96	96									2	2	4			要求金融方向在长5或长6选修“会计学”课程
				自然科学拓展及工程技术拓展课程群至少选修2个学分	2	32	32														
	通识教育课程小计				46	816	524	160	58	74	240		13	11	8.5	9	2	4.5	0	0	
学科专业基础课		必修	1027A001	信息与计算科学导论Introduction to Information and	0.5	8	8						讲座								
			1027A002-	数学分析 Mathematical	12	192	144		36	12	192	1-3	6	4	2						
			1027A005-1027A006	高等代数与解析几何 Advanced Algebra	7	112	82		24	6	112	1,2	4	3							
			1027A007	常微分方程 Ordinary Differential Equations	2	32	24		6	2	32	3			2						双语
			1027A008	概率论 Probability Theory	3	48	34		10	4	48	3			3						
			1027A009	数理统计 Mathematical	2	32	24		6	2	32	4				2					
	学科专业基础课小计				26.5	424	316	0	82	26	424		10	7	7	2	0	0	0	0	
专业核心课		必修	1031A010	程序设计与算法语言 Program Design and	4	64	28	32	2	2	64	2		4							
			1031A011	离散数学 Discrete Mathematics	2	32	26		4	2	32	3			2						
			1031A012	数据结构 Data Structures	4	64	40	16	4	4	64	4				4					
			1031A013	数值计算方法 Numerical Computation	3	48	36	8		4	48	5					4				1-12周
			1031A014	数据库原理 Database Principle	3	48	30	16		2	48	4				3					
			1031A015	数据分析 Data Analysis	3	48	22	16		10	48						4				1-12周
			1031A016	最优化方法 Methods of	3.5	56	38	8	6	4	56	4				3.5					
			1031A017	复变与实变 Function of Complex and	3	48	40		8		48	5					4				1-12周
	专业核心课小计				25.5	408	260	96	24	28	408		0	4	2	10.5	12	0	0	0	
			1042B018	Java程序设计 Java Programming	3.5	56	38	16		2	56				3.5						

拓展复合课	专业拓展（按模块选修）	模块1（应用软件与数据处理）	1042B019	计算机组成 Computer	2.5	40	36			4	40				2.5						
			1042B020	Web程序设计 Web Programming	2.5	40	22	16		2	40					2.5					
			1042B021	操作系统原理 Principles of Operating	2.5	40	36			4	40						3				1-13周
			1042B022	信息系统分析与设计 Information Systems	2	32	26			6	32						2.5				1-13周 企业 引进
			1042B023	Python数据处理 Data Processing with Python	2.5	40	22	16		2	40								5		1-8周
			1042B024	软件工程 Introduction to Software	2	32	28			4	32							2			
			1042B025	软件开发集成技术 Software Development	2	32	14	16		2	32							2			
			1042B026	算法分析与设计 Algorithm Analysis and Design	2	32	30			2	32						2.5				1-13周
			1042B027	大数据处理导论 Introduction to Big Data Processing	2	32	30			2	32							2			
		小计			23.5	376	282	64		30	376										
		至少选修学分			19.5	312	222	64		26	312		0	0	6	2.5	5.5	4	5	0	
		模块2（金融精算与统计分析）	1043B028	西方经济学 Economics	4	64	58			6	64				4						
			1043B029	金融学 Principles of Finance	2.5	40	36			4	40					2.5					
			1043B030	精算学 Actuarial Science	2.5	40	30		2	8	40						3				1-13周
			1043B031	随机过程 Stochastic Process	2	32	28		4		32						2.5				1-13周
			1043B032	金融数学 Financial Maths	3	48	28	16	2	2	48							3			
			1043B033	精算风险理论 Actuarial Risk Theory	3	48	28	16		4	48							3			
			1043B034	计量经济学 Econometrics	2.5	40	22	16		2	40								5		1-8周
			1043B035	保险经营与管理 Insurance Business Operation	3	48	42			6	48								6		1-8周
			1043B036	风险管理 Risk Management	3	48	42			6	48								6		1-8周
		小计			25.5	408	314	48	8	38	408										
		至少选修学分			19.5	312	230	48	8	26	312		0	0	4	2.5	5.5	6	5	0	

	专业拓展至少选修学分		19.5	312	222 /230	64 /48	0 /8	26	312		0	0	6 /4	2.5	5.5	4 /6	5	0	
拓展复合层次	专业复合（跨专业选修）	1041B037 数据挖掘技术 Data Mining	2.5	40	34			6	40								5		1-8周
		1041B038 R语言与统计计算 Statistical Computing	2.5	40	20	16		4	40							2.5			
		1042B039 机器学习 Machine Learning	3	48	44			4	48							3			建议应用软件与数据处理方向选修
		1042B040 计算机网络 Computer Networks	2	32	28			4	32							2			
		1042B041 计算智能 Computational	2	32	28			4	32						2				
		1043B042 证券投资分析 Analysis of Securities Investment	3	48	36	8		4	48							3			建议金融精算与统计分析方向选修
		1043B043 预测与决策 Forecast and Dedision-Making	2	32	22	8		2	32							2			
		1043B044 抽样调查 Sampling Investigation	2	32	30			2	32						2				
		1041B045 图论及其应用 Graph Theory with Applications	3	48	44			4	48				3						
		1041B046 信息论基础 Fundamental Information	3	48	44			4	48						3				
		1041B047 考研数学选讲 Mathematics in Postgraduate	6	96	32		64		96							6			
		小计	31	496	362	32	64	38	496										
		专业复合至少选修学分	10	160	126 /112	16 /32		18 /16	160		0	0	0	0	0	7.5	5	0	
	专业拓展复合至少选修学分合计		29.5	472	348 /342	80	0 /8	44 /42	472		0	0	6 /4	2.5	5.5	11.5 /13.5	10	0	
理论教学学分学时合计			127.5	2120	1448/1442	336	164 /172	172/ 170	1544		23	22	23.5 /21.5	24	19.5	15.5 /17.5	10	0	

实践教学安排（表二）

课程代码	所属模块	实践教学活动名称	学分	周或学时	按学期分配（周或周学时）												备注
					第一学年			第二学年			第三学年			第四学年			
					长1	长2	短1	长3	长4	短2	长5	长6	短3	长7	长8		
31461014	公共实践	大学始业教育 Induction of university life	1	1	1												
13461013		军事理论及训练 Military Theory and Training	3	3	3												
13461015		体质健康训练 Health Training	0.5	16								2					
31463007		思政社会实践 Ideological Social Practice	2	2						2							
31467084		大学生职业发展与就业指导实践 Practice of career planning and guidance for college students	1	22	22												
1012A022	基础实验	大学物理实验B Physical Experiment of college B	1	33		3											1-11周
1061A148		MATLAB与科学计算实验 Matlab and Science Computing Experiment	1	32				2									1-16周
1061A149	专业大实验	大数据处理实验 Big Data Processing Experiment	1	32										2			
1054A250	专项设计	移动应用软件设计 Mobile Application Software Design	2								2 (14-15周)						根据兴趣选择至少1个专项
10444315		精算设计 Actuarial Design	2								2 (14-15周)						
3151A016	基础实践	认识实习 Cognition Practice	1	1			1										
10444116		数学建模实训 Mathematical Modeling Training	2	2						2							
1054A251	专业实践	Linux系统实践 Practice of Linux System	2	2							2 (16-17周)						应用软件与数据处理模块
10444218		应用软件项目综合实训 Comprehensive Training in Application Software Project	2	2									2				
1054A352		统计实践 Statistical Practice	2	2							2 (16-17周)						金融精算与统计分析模块
10444320		计算机财务实践 Computer Accounting Practice	2	2									2				
1053A153		技术实习 Technology Practice	9	9										9			10-18周
1055A154		毕业设计（论文） Undergraduate Thesis	16	16											16		1-16周
31462009	第二课堂 Extracurricular Teaching		3		第 12 页		3										
合计			47.5														

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