

# 统计学一级学科硕士研究生培养方案

## Scheme of Master Disciplines for Statistics First-grade

专业代码: 0714

学科门类: 理学

Code of Specialty: 0714

Department of Discipline: Science

一级学科: 统计学

学分要求: 35

First-grade Discipline: Statistics

Credit Setting: 35

### 一、学科、专业简介 (Disciplines Instruction)

经过多年来的不断建设和发展,数理学院统计学学科整体实力不断增强,于2012年3月成功获批为硕士学位授权一级学科。目前本学科在师资队伍、教学、科研、人才培养等方面已形成自己的特色,若干研究领域的科研成果已经达到国内领先或先进水平。

After many years of continual construction and development, the comprehensive strength of the Statistics discipline of Mathematics and Physics College constantly increased and successfully been granted a master first-grade discipline in March 2011. At present this subject has formed its own characteristics in teacher team, teaching, research and training. Some achievement in some research fields has reached the domestic leading or advanced level.

统计学学科目前共有教师26人,其中教授5人,副教授6人,硕士生导师10人,具有博士学位的教师10名,具有硕士学位的教师16名,拥有一批国内知名的中青年专家和学术骨干,现已形成了一支学科特色鲜明、结构合理、科研实力雄厚的学科团队。

At Present, statistics discipline consists of 26 teachers, which include 5 professors, 6 associate professors and 10 master instructors. There are 10 teachers who have the doctor's degrees, 16 teachers who have the master's degrees. It has a group of famous young experts and well-known academic backbones. Now it has formed a discipline team with clear subject characteristic, reasonable structure and strong scientific research capacity.

目前本学科的研究方向主要包括:应用统计学、数量经济学、组合设计与编码理论、数值代数与科学计算、智能控制等。

Currently, the research fields of the discipline mainly include applied statistics, combinatorics design and coding theory, numerical algebra and scientific computing, intelligent control.

本学科团队具备较强的科研实力和水平,科研成果丰硕。近五年来,在《中国科学》、《中国软科学》、《数学学报》、《Neuro computing》等高水平期刊上共发表学术论文100多篇,被SCI、EI、ISTP等收录60余篇,并获得省高等学校优秀科研成果奖、省自然科学技术奖等各种学术奖励10余项。近五年来,该学科团队共获批国家自然科学基金、省自然科学基金等科研项目30余项。

The discipline team has strong research capabilities and achieved fruitful achievements. In the past five years, the team published more than 100 academic articles in the 'Science in China', 'China Soft Science Magazine', 'Acta Mathematica Sinica', 'Neuro computing' and other high-level academic journals etc. More than 60 articles have been embodied by SCI, EI and ISTP. It has also got more than 10 kinds of academic awards, such as Provincial Science Research Award for common colleges, Provincial Natural Science and Technology Award. In the past five years, the disciplinary team was authorized more than 30 science programs such as National Natural Foundation and Provincial Natural Foundation research projects.

本学科拥有研究生机房、应用数学研究所和信息与计算科学实验室等科研场所，实验室和研究所总面积达 500 多平方米，共有 200 多台微机、多台高端服务器和路由器、配有多媒体教学系统等。实验室和研究所均构架了内部局域网，实验设备先进，为研究生教学和科研提供了良好的条件。

This discipline has a postgraduate computer room, Institute of Applied Mathematics, Information and Computing Science Laboratory and other research institutes. The total area of these laboratories and research institutes is about 500 square meters and has more than 200 computers, multiple high-end servers and routers, multimedia teaching system. Laboratories and research institutes are all constructed with framework of the internal LAN. These advanced laboratory equipments provide a good condition for graduate teaching and research. the first-grade discipline of Master degree.

统计学学科的整体目标是建成一个在统计学领域具有一定影响的学科，努力争取建成具有博士学位授权一级学科的研究生培养体系，推动学校学科整体实力的增长和高层次人才的培养。

The overall goal of Statistics is to construct a discipline which has some influence in Statistics field, strive for forming a postgraduate training system with the Doctorate authorization First-Level Discipline and to promote the growth of the overall strength of the school subjects and the training of high-level talents.

## 二、培养目标 (Objectives of Training)

1、掌握马列主义、毛泽东思想和邓小平理论和“三个代表”重要思想，树立科学发展观。树立正确的世界观、人生观、价值观，遵纪守法，热爱祖国，热爱社会主义，具有勇于追求真理和献身于科学教育事业的敬业精神，富有历史责任感，具有良好的道德品质和较高科学素养及创新能力。

Graduate students will grasp the basic theories of Maxism and Leninism, Mao Zedong Thought and Deng Xiaoping Theory and ‘Three Represents’ important thought, establish the Scientific Outlook on Development, set up the correct world outlook, the outlook on life and the values, abide by the laws and regulations, love the motherland, love socialism, have the courage to pursue truth and the devotion to science and education, high historical sense and have the good moral character and high scientific quality and ability of innovation.

2、掌握本专业相关知识的基本理论体系和思想方法，了解本学科目前的进展与动向，具有较扎实的专业理论基础，具有从事科学研究工作或独立担负专门技术工作的能力，能胜任高等数学、基础数学和统计学教育、科研和教育管理工作的高级专门人才。

Graduate students should master the basic theory system, thought and method related to the major, understand the current development and trends of the subject. They should also have solid theoretical foundation and the ability of being engaged in scientific research or independent technical expertise. They should be qualified for higher mathematics, basic mathematics and statistics teaching, scientific research and education management.

3、掌握一门外语，并能运用该门外语较熟练地阅读本专业的外文资料，具有用外语进行专业研究及国际学术交流的能力。

Graduate students should master a foreign language, be able to use the language to read foreign professional materials, have the ability of professional research and international scholarly exchange by the foreign language.

4、具有健康的体魄和心理素质。

Graduate students should have healthy body and psychological quality.

### 三、学制及学习年限 (Educational System and Length of Schooling)

1、全日制硕士生的学制为3年，其中课程学习时间为I—II学期，学习年限为2~4年，课程学习成绩有效期为4年。

The school system of the Full-time Master is 3 years, whose course learning time is I to II terms, training period is 2 to 4 years and academic course is valid for 4 years.

#### 2、学分要求(Credit requirements)

全日制硕士生课程学习实行学分制，总学分不少于35学分，必修课学分不少于27学分，其中学位课程（包括政治理论、外语和专业基础课等）不少于18学分，研究环节8学分，其余为选修学分。

Full-time Master's courses learning implements credit system. The total credits of learning courses are not less than 35 credits and the credits are not less than 27 credits, of which, degree course credits (including political theory, foreign languages and Specialized courses, etc.) are not less than 18 credits and compulsory part 8 credits. The rest is the elective credit.

### 四、研究方向 (Research Orientation)

序号 Num	名称 Name	研究方向及特点 The Research Orientation and characteristic
1	数理统计学 Mathematical Statistics	<p>1、统计推断。本方向主要研究参数估计和假设检验问题。 Statistical Inference。In this direction, we mainly study parameter estimation and hypothesis testing.</p> <p>2、统计计算。本方向主要研究传统的统计计算基本概念与算法，如误差分析、矩阵计算、最优化、随机数生成、随机模拟等。 Statistical calculation. In this direction, we mainly study the basic concepts and algorithms of traditional statistical computation, such as error analysis, matrix computation, optimization, random number generation and stochastic simulation.</p>
2	应用统计学 Applied Statistics	<p>1、数据挖掘。本方向主要研究利用统计、在线分析处理、情报检索、机器学习、专家系统和模式识别等方法分析数据。 Data mining. In this direction, we mainly use statistics, online analysis, information retrieval, machine learning, expert system and pattern recognition to analyze the data.</p> <p>2、生物医学统计。本方向主要研究统计学习、数据挖掘等大数据技术在生物医学中的应用。 Biomedical statistics. This research mainly focuses on the application of big data technology such as statistical learning and data mining in biomedicine.</p>
3	金融统计 Financial Statistics	<p>1、金融市场统计。本方向主要研究金融市场分类、利率统计、汇率统计等。 Financial market statistics. This study focuses on the classification of financial markets, interest rate statistics and exchange rate statistics.</p> <p>2、银行信贷统计。本方向主要研究银行存款资金统计、银行贷款资金统计以及信贷资金平衡统计。 Bank credit statistics. This study mainly focuses on statistics of bank deposit funds, statistics of bank loan funds and statistics of credit capital balance.</p>

## 五、课程设置 (Course Setting)

### 统计学一级学科硕士研究生课程设置

#### (Course Setting of Master Disciplines for Statistics First-grade)

课程类别 Course Type	课程编号 Course NO	课程名称 Course Name	课堂学时 Class Hour	学分 Credit	开课学期 Semester Classes	教学方式 Teaching Method	考核方式 Assessing Method	开课单位 Class Department	备注 Remarks
学位课 Degree Course	公共基础课 Common Course	G000042	中国特色社会主义理论与实践研究 Socialist Theory with Chinese Characteristics and Practical Research	36	2	I	A	C	马克思主义学院
		G000039	科学人文讲座 Scientific and Humanistic Lectures	16	1	II	A	C	
		G000052	综合英语(I, 含16学时视听) Comprehensive English(I, Contains 16 classes of audio-visual)	64	2	I	A	A	外国语学院 (学生制定培养计划时, 根据实际情况选够4分)
		G000053	通用学术英语(II) General Academic English(II)	32	2	II	A	A	
			小语种(小语种考生) Minority Languages (minority languages students)	96	4	I、II	A	A	
	专业基础课 Specialized Course	M090008	高等回归分析 Advanced Regression Analysis	48	3	I	A	A	数理学院
		M090009	统计软件与计算 Statistics Software and Calculation	32	2	II	A	A	数理学院
		M090011	高等数理统计 Advanced Mathematical Statistics	48	3	I	A	A	数理学院
		M090042	应用随机过程 Applied Stochastic Process	48	3	II	A	A	数理学院
		M090016	多元统计分析 Multivariate Statistical Analysis	48	3	I	A	A	数理学院
M090017	矩阵论 Matrix Theory	48	3	I	A	A	数理学院		
M070311	高级计量经济学 Advanced Econometrics	32	2	I	A	0.7A+ 0.3F	经管学院		

必修  
Obligatory Course

		M070345	<b>高级宏观经济学</b> Advanced Macroeconomics	32	2	I	A	0.7A+ 0.3F	经管学院	
		M07020	<b>高级微观经济学</b> Advanced Microeconomics	32	2	I	A	0.7A+ 0.3F	经管学院	
		M070304	<b>应用经济统计学</b> Application of Economic Statistics	32	2	I	A	A	经管学院	
选修课 Selective Course		G000040	<b>自然辩证法概论</b> Introduction to Natural Dialectics	18	1	I	A	A	马克思主义学院	必修 Obligatory Course
		G000054	<b>体育</b> Physical Education	32	1	I	D	F	体育学院	必修 Obligatory Course
		G000055	<b>口语</b> Spoken Language	16	1	I	A	E	外国语学院	必修 Obligatory Course
		M070309	<b>科技论文写作</b> Writing of Technological Thesis	16	1	II	A	A	经管学院	必修 Obligatory Course
		M070347	<b>当代西方经济学流派与思潮</b> Contemporary Western Economics School and Trend of Thought	32	2	II	A	0.7A+ 0.3F	经管学院	选修 Selective Course
		M090012	<b>机器学习</b> Machine Learning	32	2	II	A	A	数理学院	选修 Selective Course
		M070329	<b>金融计量经济学</b> Financial Econometrics	32	2	II	A	A	经管学院	选修 Selective Course
		M090045	<b>现代启发式方法</b> Modern Heuristics Method	32	2	II	A	A	数理学院	选修 Selective Course
		M090041	<b>运筹与优化</b> Operation and Optimization	48	3	II	A	A	数理学院	选修 Selective Course
		M090024	<b>金融统计</b> Financial statistics	32	2	II	A	A	数理学院	选修 Selective Course
		M090018	<b>保险精算学</b> Insurance Actuarial Theory	32	2	II	A	A	数理学院	选修 Selective Course
		M090019	<b>抽样调查</b> Sampling Survey	32	2	II	A	A	数理学院	选修 Selective Course
		M090020	<b>数据挖掘</b> Data Mining	32	2	II	A	A	数理学院	选修 Selective Course
	M090021	<b>贝叶斯统计</b> Bayesian Statistics	48	3	II	A	A	数理学院	选修 Selective Course	

	M090023	<b>货币银行学</b> Money and Banking	32	2	II	A	A	数理学院	<b>选修</b> Selective Course
	M090051	<b>金融数学</b> Mathematics of Finance	32	2	II	A	A	数理学院	<b>选修</b> Selective Course
	M090039	<b>现代数值分析</b> Modern Numerical Analysis	32	2	II	A	A	数理学院	<b>选修</b> Selective Course
	M090040	<b>小波分析及其应用</b> Wavelet Analysis and Its Applications	32	2	II	A	A	数理学院	<b>选修</b> Selective Course
	M090036	<b>非参数统计</b> No-Parametric Statistics	32	2	II	A	A	数理学院	<b>选修</b> Selective Course
<b>研究环节</b> Research Part	M090002	<b>开题报告</b> Thesis Proposal		1	III				<b>必修</b> Obligatory Course
	M090003	<b>学术报告</b> Academic Lectures		1	I—IV				
	M090005	<b>中期考核</b> Medium-term Assessment		1	III—IV				
	M090007	<b>学位论文</b> Degree Thesis		5					
<b>补修课程</b> Make-up Course	M090037	<b>初等概率论</b> Elementary Probability Theory	32	2	I	A	A	数理学院	可根据导师要求补修, 不计入学分 Patching in order to mentor's requirement, Not included in the credit
	M090038	<b>初等数理统计</b> Elementary Mathematical Statistics	32	2	I	A	A	数理学院	
<b>注 1. 教学方式代码: A—课堂讲授, B—学术研讨, C—专题报告, D—实践, E—其他; 例: 0.7A+0.3B</b> Notes1. Teaching method codes: A—lecturing in class, C—Academic discussion, C—subjective report, D—practice, E—others; e.g.: 0.7A+0.3B									
<b>注 2. 考核方式代码: A—闭卷笔试, B—开卷笔试, C—课程论文, D—平时作业, E—口试, F—其他; 例: 0.8A+0.2D</b> Notes2 Examining method codes: A—written exam with closed paper, B—written exam with opened paper, C—Class paper, D—ordinarily assignment, E—oral test, F—others; e.g.: 0.8A+0.2D									

## 六、论文的要求 (Dissertation Requirements)

1、本专业研究生学位论文的开题工作一般安排在第三学期完成。硕士生应在导师的指导下独立完成开题报告, 导师应对研究生开题报告的内容进行审查, 经导师同意方可参加学科组举行的开题报告。

Generally the opening arrangements of the graduate dissertation are completed in the third semester.

Graduate students should independently finish opening report under the guidance of instructors and the contents of the dissertation opening report should be examined by their instructors. After getting the agreement of their instructors, they can participate in the dissertation report held by the subject group.

2、学位论文工作是研究生培养的主要组成部分，是对研究生进行科学研究或承担专门技术工作的全面训练，是培养研究生综合运用所学知识，发现问题、分析问题和解决问题能力的主要环节，是研究生创新能力的体现。研究内容应是对我国经济和社会发展有重要意义的课题，或是学科前沿、具有重要意义的课题，要突出学位论文的创新性、前沿性和科学性。

Dissertation work is a major component of master training. It is a comprehensive training to conduct scientific research or take specialized technical work for graduate students. Dissertation work is the main part of developing the abilities of graduate students to identify, analyze and solve problems by using the knowledge that they have learned. It also is the embodiment of their innovation. The research contents should be important issues to China's economic and social development or frontier and important issues and should highlight an innovative, cutting-edge and scientific dissertation.

3、硕士学位论文要求在导师指导下由学生独立完成。题目大小要适度，应该是学术前沿中有一定理论意义和创新性的问题，其主要部分应当达到在国内外正式刊物上发表的水平。

Graduate students should fulfill dissertation independently under the guidance of instructors. The topic must be moderate. The dissertation should be theoretic significance and the innovative questions of the academic front and its main part should be published in the domestic and foreign official publications.

4、论文书写应规范，一般包括题目、中/英文摘要、目录、前言、正文、结论及参考文献等；要求论文表述流畅、推理准确、语言精练。

Dissertation writing should be standardized, generally include title, Chinese/English abstract, catalog, introduction, body, conclusion and references, etc. The dissertation requires fluent statement, accurate reasoning and concise language.

5、研究生应该严守学术道德，坚决杜绝代写、买卖论文，抄袭、剽窃、侵吞和篡改他人学术成果，伪造、篡改实验数据等不道德、不诚信的行为，一经发现，严格按照学校有关规定处理。

Graduate students should abide by academic ethics, can't conduct some immoral and dishonest behaviors such as replacing others to write and buying or selling papers, plagiarizing, embezzling and falsifying other's academic achievement and falsifying experiment data. The graduate student will be punished according to the relative formulations of school once his immoral and dishonest behaviors are found.

6、研究生在读期间所发表的学术论文应该符合学校对硕士研究生学术论文数量和质量的最低要求。

The academic papers published during the reading period should meet the academic requirements of the minimum quantity and quality.

7、在读期间研究生应至少在学院内做一次学术报告。听取的学术讲座次数不应少于5次，结束后递交正文不少于3000字的心得体会报告，内容可以是综述性的，也可以是就某一个学术讲座专题的讨论。

The graduate student during the study period at least should do one academic report for the school. He should attend academic lectures at least 5 times, and submit a report more than 3000 words, the content of which can be either a summary of the report or a discussion on the topic of the academic seminar.