

# 统计学专业培养方案

**专业名称与代码：**统计学 071201

**专业培养目标：**

本专业旨在培养掌握统计学基本理论与方法，具有良好的数学和经济学素养，熟练掌握市场调查、风险管理、数据挖掘理论与方法，具有正确运用统计方法、统计软件分析数据和解决实际问题能力，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适应能力，能在金融机构（含银行、证券、保险、投资机构）、工商企业、政府部门从事统计分析、风险管理、数据分析以及其他经济管理工作的复合应用型专门人才。

**专业毕业要求：**

1. 具有扎实的数学基础，受到比较严格的科学思维训练；
2. 掌握统计学的基本理论和方法，具有采集数据和处理数据的基本能力；
3. 具有经济学基础，熟悉国家经济发展的方针、政策和法规，有利用信息资料进行综合分析的能力；
4. 了解经济统计、工业统计以及技术工程中的模拟与仿真等有关的自然科学、社会科学、工程技术某一领域的基本知识，具有应用统计学理论分析、解决该领域实际问题的初步能力；
5. 能熟练使用各种统计软件包，有较强的统计计算能力；
6. 了解统计学专业的理论与方法的发展动态及其应用前景；
7. 掌握一门外国语，能顺利地阅读本专业的外文书刊；
8. 掌握资料查询、文献检索的基本方法，具有一定的科学研究和实际工作能力。

毕业要求实现及途径：

序号	毕业要求	实现途径（教学过程）
1	具有扎实的数学基础,受到比较严格的科学思维训练	① <b>课堂教学：</b> 高等数学、线性代数、概率论等相关课程。 ② <b>课外学习：</b> 数学建模比赛。
2	掌握统计学的基本理论和方法,具有采集数据和处理数据的基本能力	① <b>课堂教学：</b> 应用统计学、多元统计分析、非参数统计、应用抽样技术、应用回归分析、应用时间序列分析等相关课程。 ② <b>课外学习：</b> 专业书籍阅读。
3	具有经济学基础,熟悉国家经济发展的方针、政策和法规,有利用信息资料进行综合分析的能力	① <b>课堂教学：</b> 微观经济学、宏观经济学、金融学、国民经济统计学、经济预测和决策等相关课程。 ② <b>课外学习：</b> 推荐阅读专业书籍、学术期刊。

序号	毕业要求	实现途径（教学过程）
4	了解社会经济统计、工业统计以及技术工程中的模拟与仿真等有关的自然科学、社会科学、工程技术某一领域的基本知识,具有应用统计学理论分析、解决该领域实际问题的初步能力	① <b>课堂教学</b> : 社会科学类、自然科学类相关课程。 ② <b>课外学习</b> : 教师学术指导、暑期社会实践、认识实习、教学实习、毕业实习。
5	能熟练使用各种统计软件包,有较强的统计计算能力	① <b>课堂教学</b> : C 语言程序设计, 统计应用软件 (学习 SAS、SPSS、Eviews、Matlab、R 等软件)、主干课程实验课。 ② <b>课外学习</b> : 自主学习。
6	了解统计学专业的理论与方法的发展动态及其应用前景	① <b>课堂教学</b> : 相关课程介绍。 ② <b>课外学习</b> : 学术讲座、自主学习。
7	熟练掌握一门外国语,能顺利地阅读本专业的外文书刊	① <b>课堂教学</b> : 大学英语、应用回归分析 (双语)、多元统计分析 (双语)、统计软件应用等相关课程。 ② <b>课外学习</b> : 推荐阅读专业外文书籍、国际学术期刊。
8	掌握资料查询、文献检索及运用现代信息技术获得相关信息的基本方法,具有一定的科学研究和实际工作能力	① <b>课堂教学</b> : 选修文献检索相关课程。 ② <b>课外学习</b> : 自主学习, 教师学术指导。

**主干学科**: 数学、统计学、应用经济学。

**专业核心课程**: 高等数学、线性代数、概率论、应用统计学、计量经济、多元统计分析、非参数统计、应用抽样技术、应用回归分析、应用时间序列分析。

**主要专业实验**: 应用统计学、计量经济学、应用时间序列分析、应用回归分析、多元统计分析、应用抽样技术、统计软件应用等课程的上机实习。

**主要实践性教学环节**: 包括认识实习、教学实习、毕业实习, 一般安排 16 周。

**修业年限**: 四年。

**授予学位**: 理学学士。

**相近专业**: 经济统计学、金融数学。

## Program For Statistics

**Specialty and Code:** Statistics 071201

### Education Objective:

The major is designed to cultivate graduates to grasp the basic theories and methodology of statistics, be good at economics and mathematics; get familiar with the theories and methodology of risk control, market research and data mining; can analyze the data and solve practical problems by using statistical methods and corresponding computer softwares; have well-cultivated ideological and ethical standards; professional skills, cultural cultivation, physical quality, strong innovation capacities and adaptability. The students will be able to offer their services in such fields as statistic analysis, risk control, data analysis and other economic management sectors in financial institutions such as banking, securities, insurance and investment, industrial and commercial enterprises as well as government organizations.

### Graduation Requirements:

1. Having a solid background with well trained in mathematics;
2. Mastering knowledge in fundamental theories and methods of statistics, with basic ability of data collection and data processing;
3. Economics foundation, familiarity with guidelines, policies and regulations of national economic development, ability to use information for comprehensive analysis;
4. Knowledge about economic statistics, industry statistics and modeling and simulation in the technical engineering related natural science and social science. Preliminary ability to analyze and solve practical problems in the related fields;
5. Skillful of statistical software packages, with good ability of statistical computing;
6. Understanding the comprehension of development in theory and applications of statistics;
7. Capacity of foreign language to read professional books and periodicals;
8. Basic methods of information inquiring, with basic ability of research and practice.

### Graduation requirements and ways to achieve:

No.	Graduation requirements	Ways to achieve (teaching process)
1	Solid background and well trained in mathematics.	① <b>Classroom Teaching:</b> Advanced Mathematics, Linear Algebra, Probability, etc. ② <b>Out-of-class Learning:</b> the Mathematical Modeling Contest.
2	Mastering knowledge in	① <b>Classroom Teaching:</b> Applied Statistics,

No.	Graduation requirements	Ways to achieve (teaching process)
	fundamental theories and methods of statistics, with basic ability of data collection and data processing.	Multivariate Statistical Analysis, Non-parameter Statistics, Applied Sampling Technique, Applied Regression analysis, Applied Time Series Analysis, etc. ② <b>Out-of-class Learning:</b> Professional books.
3	Economics foundation, familiarity with guidelines, policies and regulations of national economic development, with the ability to use information for comprehensive analysis.	① <b>Classroom Teaching:</b> Microeconomics, Macroeconomics, Finance, National Economic Statistics, Economic Prediction and Decision, etc. ② <b>Out-of-class Learning:</b> Recommended Books and Journals about Statistics.
4	Knowledge about economic statistics, industry statistics and the modeling and simulation in the technical engineering related natural science, social science. Preliminary ability to analyze and solve practical problems in the related field.	① <b>Classroom Teaching:</b> Introduction to Social Science, Natural Science, etc. ② <b>Out-of-class Learning:</b> Guide for Tourism Research, Summer Social Practice, Cognitive Practice, Teaching Practice, Practice for Graduation.
5	Skillful of statistical software packages, with good ability of statistical computing.	① <b>Classroom Teaching:</b> C Language Programming, Software for Statistics (SAS, SPSS, Eviews, Matlab, R etc.), Experiment of Main Major Courses. ② <b>Out-of-class Learning:</b> Self-regulation Study.
6	Understanding the comprehension of development in theory and applications of statistics.	① <b>Classroom Teaching:</b> Course Introduction. ② <b>Out-of-class Learning:</b> Research Report, Self-regulation Study.

No.	Graduation requirements	Ways to achieve (teaching process)
7	Capacity of foreign language to read professional books and periodicals.	<p>① <b>Classroom Teaching:</b> College English, Applied Regression analysis (Bilingual Teaching), Multivariate Statistical Analysis (Bilingual Teaching), Software for Statistics, etc.</p> <p>② <b>Out-of-class Learning:</b> Recommended Specialized Foreign Language Books and International Academic Journals.</p>
8	Basic methods of information inquiring, with basic ability of research and practice.	<p>① <b>Classroom Teaching:</b> Elective courses on Literature Retrieval.</p> <p>② <b>Out-of-class Learning:</b> Self-Study, Guide for Tourism Research.</p>

**Major Disciplines:** Mathematics, Statistics, Applied Economics.

**Main Courses:** Advanced Mathematics, Linear Algebra, Probability, Applied Statistics, Econometrics, Multivariate Statistical Analysis, Non-parameter Statistics, Applied Sampling Technique, Applied Regression analysis, Applied Time Series Analysis.

**Lab Experiments:** Applied Statistics, Econometrics, Applied Time Series Analysis, Applied Regression analysis, Multivariate Statistical Analysis, Applied Sampling Technique, Software for Statistics.

**Practical Work:** The main teaching practice includes cognitive practice, teaching practice, and graduate practice, it generally takes 16 weeks.

**Duration:** Four years.

**Degree Granted:** Bachelor of Sciences.

**Related Specialties:** Economic Statistics, Financial Mathematics.

统计学专业课程教学计划表

Course Descriptions of Statistics

课程类别 Classification	课程编号 Code	课程名称 Course Name	学分 Crts	学时 Hrs	学时分类 Class Hours		先修课程 Prerequisite courses	学期学分分配 Semester Credits										
					讲课 Lec.	实验 Lab.		一	二	三	四	五	六	七	八			
								1st	2nd	3rd	4th	5th	6th	7th	8th			
通识教育课 Liberal Education Courses	11706200	马克思主义基本原理 Principles of Marxism	3	48	48			3										
	11706500	毛泽东思想与中国特色社会主义理论体系概论 Introduction to Mao Tse-tung Thought and the Theoretical System of Socialism with Chinese Characteristics	4	64	64				4									
	11711800	中国近现代史纲要 The Essentials of Modern Chinese History	2	32	32						2							
	120002*0	思想道德修养与法律基础 Morality Education & Fundamentals of Law	3	48	48				1.5	1.5								
	113076*0	体育 Physical Education	4	144	144				1	1	1	1						
	109116*0	大学英语 College English	12	192	192				3	3	3	3						
	11918901	C 语言程序设计 A C Language Programming (A)	3.5	56	40	16				3.5								
	14300100	军事理论 Military Theory	2	32	32				2									
	20826500	统计学学科(专业)导论 Introduction to Statistics	1	16	16				1									
		选修 Elective		总计 12 学分, 含创新创业选修课学分, 跨学科选修课不低于 6 学分	12	192												
	小计 Sum		46.5	824	616	16		11.5	13	6	4	0	0	0	0	0	0	
学科基础课 Disciplinary Fundamental Courses	212127*1	高等数学 A Advanced Mathematics A	11.5	184	184			5	6.5									
	20805200	管理学 Management	3	48	48			3										
	2100670D	微观经济学 A(双语) Microeconomics A	4	64	64				4									
	2081550D	宏观经济学 A(双语) Macroeconomics A	4	64	64					4								
	21004101	金融学 A Finance A	4	64	64					4								
	21202100	概率论 Probability Theory	3.5	56	56					3.5								
	20826801	会计学 Accounting	3	48	40	8				3								
	21212801	线性代数 A Linear Algebra A	3.5	56	56						3.5							
	20817401	应用统计学 A Applied Statistics A	4	64	48	16						4						

课程类别 Classification	课程编号 Code	课程名称 Course Name	学分 Crts	学时 Hrs	学时分类		先修课程 Prerequisite courses	学期学分分配 Semester Credits							
					Class Hours			一	二	三	四	五	六	七	八
					讲课	实验		1st	2nd	3rd	4th	5th	6th	7th	8th
	21003500	计量经济学 Econometrics	4	64	48	16	下半学期					4			
	<b>小计 Sum</b>		<b>44.5</b>	<b>712</b>	<b>672</b>	<b>40</b>		<b>8</b>	<b>10.5</b>	<b>14.5</b>	<b>7.5</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
专业主干课 Main Specialty Courses	20824800	应用回归分析 Applied Regression Analysis	4	64	48	16						4			
	21201601	多元统计分析 A Multivariate Statistical Analysis A	4	64	48	16						4			
	20825100	统计软件应用 Software for Statistics	3.5	56	24	32	上半学期					3.5			
	21007501	证券投资分析 A Securities Investment Analysis A	3.5	48	28	20						3			
	20824900	应用抽样技术 Applied Sampling Technique	3	48	40	8							3		
	20825000	货币与金融统计学 Monetary and Financial Statistics	3.5	56	40	16								3.5	
	21007200	应用时间序列分析 Applied Time Series Analysis	4	64	48	16								4	
	20825200	非参数统计 Nonparametric Statistics	3	48	40	8								3	
	20825300	国民经济统计学 National Economic Statistics	2	32	32										2
	21004701	经济预测与决策 A Economic Prediction and Decision A	3	48	40	8									3
		<b>小计 Sum</b>		<b>33.5</b>	<b>528</b>	<b>388</b>	<b>140</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14.5</b>	<b>13.5</b>	<b>5</b>
专业选修课 Specialty Elective Courses		具体见专业选修课列表	22	352											
<b>合计 Sub-total</b>			<b>146</b>	<b>2416</b>	<b>1676</b>	<b>196</b>		<b>19.5</b>	<b>23.5</b>	<b>20.5</b>	<b>11.5</b>	<b>18.5</b>	<b>13.5</b>	<b>5</b>	<b>0</b>
实践环节 Practical Work	44300200	军事训练 Military Training	2	2周				2							
	41919001	C语言课程设计 A Course Design for C Language A	1.5	1.5周					1.5						
	40827500	专业认识实习 Cognitive Practice	2	2周						2					
	40827600	专业教学实习 Teaching Practice	4	4周							4				
	40829400	毕业实习 Practice for graduation	10	10周											10
	40829500	毕业论文（设计） Thesis for graduation	8	8周											8
		<b>小计 Sum</b>		<b>27.5</b>	<b>27.5周</b>				<b>2</b>	<b>1.5</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>

课程类别 Classification	课程编号 Code	课程名称 Course Name	学分 CrS	学时 Hrs	学时分类 Class Hours		先修课程 Prerequisite courses	学期学分分配 Semester Credits										
					讲课 Lec.	实验 Lab.		一	二	三	四	五	六	七	八			
								1st	2nd	3rd	4th	5th	6th	7th	8th			
创新创业学习学分 Autonomous Learning	ZZ35000S	社会调查 Social Investigation	2															
		其他(学科竞赛、发明创造、科 研报告) Others (Contest, Invention, Innovation and Research Presentation)	3															
	小计 Sum		5															
总计 Total			178.5	2416+27.5 周	1676	196		21.5	25	22.5	11.5	22.5	13.5	5	18			
可开出专业选修课列表 Specialty Elective Courses	20821900	金融市场学 Finance Market	3.5	56	48	8					3.5							
	20833300	博弈论与信息经济学 Game Theory and Information Economics	2.5	40	40						2.5							
	20823600	投资经济学 Investment Economics	3	48	48						3							
	20821101	财政学 A Public Finance A	3	48	48						3							
	21908000	数据仓库与数据挖掘 Data Warehouse and Data Mining	2	32	32							2						
	20832500	保险学 Insurance	2	32	32							2						
	21000800	产业经济学 Industrial Economics	2	32	32									2				
	20821700	金融工程 A Financial Engineering A	3	48	48										3			
	20822000	保险精算 Actuarial Science	2	32	32										2			
	20825600	定性数据统计分析 Categorical Data Analysis	3	48	40	8										3		
	20825400	风险管理 Risk Management	2	32	32												2	
	20814100	运筹学 Operations Research	3	48	48												3	
	20825500	生存分析 Survival Analysis	2	32	24	8											2	

注： 通识教育选修课学分和创新创业自主学习学分未列入具体学期。

统计专业课程分类统计

	通识教育课程 Liberal Education Courses		学科基础课 Disciplinary Fundamental Courses	专业主干课 Main Specialty Courses	专业选修课 Specialty Elective Courses	实践环节 Practical Work	创新创业自主 学习 Autonomous Learning	学时总计 Total Hour	学分总计 Total Credits
	必修	选修							
学时/ 学分	632/34.5	192/12	712/44.5	528/33	352/22	27.5 周 /27.5	5	2416+27.5 周	178.5
学分所 占比例	26.05%		24.93%	18.49%	12.32%	15.41%	2.80%		100%



