

# Economic Statistics

(Grade 2022)

Course code: 020102

## I. Cultivation Objectives

### 1. General cultivation objective

This Program of Economic Statistics cultivates high-level application-oriented talents who have good overall development in moral, intellectual, physical, aesthetic and labour aspects and a solid foundation in economics, master systematic statistical theory and methods, and can skillfully use computers for statistical information processing and data analysis, and can engage in statistical investigation, statistical information management, data analysis and consultation, quantitative modeling and forecasting in government administration departments at all levels, enterprises and institutions, and financial, securities and insurance industries.

### 2. Objective of value guidance

Takes the spirit of the model worker and the spirit of craftsmanship as the value orientation, this program cultivates spirit of craftsmanship and nurture talents with this spirit. In the implementation of education and teaching, this program focuses on cultivating students' sense of integrity and a strong sense of social responsibility, establishing a sound professional personality and consciousness of the rule of law, and inspiring students to work with a commitment to excellence in data analysis and a love of statistics. Using their professional knowledge, abilities and literacy, they will contribute their wisdom and strength to the statistical career and economic development of China.

### 3. Five years after graduation, students in this program should achieve the following objectives:

They will have clear career plans and good career prospects in their jobs in various industries, achieve certain work achievements and be promoted in their posts, and will become the mainstay and core player of their companies. Their sense of social responsibility will be further enhanced, and their ability to coordinate and manage their work will be more prominent, with certain leadership skills. The ability to learn throughout life is further enhanced, and through continuous learning on the job or further study at home and abroad, their own professional abilities are able to stand alone, adapt to the needs of social development, and have better innovative and entrepreneurial abilities, contributing to the development of statistics and the economy of China.

## II. Graduation requirements

Students in this program mainly study the basic theories and knowledge of economics and statistics, and should systematically master the basic theories, professional knowledge and business skills of Economic Statistics, with strong practical ability to work in the fields related to economic statistics, and preliminary mastery of methods to solve complex problems in the professional field. Graduates are expected to achieve the following nine competencies:

**1. Morality and Ethics:** Have good humanistic foundation, scientific spirit, professionalism and a sense of social responsibility, and positive attitude towards people. Master scientific worldview and methodology and practice core values of socialism.

1-1 Have correct values, moral values and legal consciousness, be patriotic, honest and law-abiding.

1-2 Have a strong sense of social responsibility and a good collaborative spirit.

1-3 Be physically healthy and mentally fit to keep up with the times and adapt to scientific and social developments and changes.

1-4 Have a good cultural and scientific literacy and master a scientific world perspective and methodology.

**2. Professional knowledge:** Have solid basic knowledge, professional knowledge and professional skills, master the basic research methods of the profession, understand the latest developments and development trends of the profession and related fields.

2-1 Have a relatively sound knowledge of mathematics and rigorous mathematical logic, and be able to apply knowledge of Advanced Mathematics to solve mathematical problems encountered in the workplace.

2-2 Have a solid mastery of basic knowledge, fundamental theory and basic application skills in economics. Have a mastery of the laws of economic operation, an understanding of the intrinsic meaning of economic indicators and the interconnections between them.

2-2 Have a systematic mastery of basic knowledge and basic theory of statistics, the ability to quantitatively analyse all types of data and model data, and the ability to correctly use statistical ideas and methods to analyse and judge the calculation results of statistical software.

2-3 Have some basic knowledge of economics, accounting and Electronic Commerce.

2-4 Be familiar with national economic development guidelines and policies, national and local statistical laws and regulations.

**3. Ability to innovate:** Have the ability to think logically and creatively, the ability to identify, analyse and evaluate phenomena and problems in the profession and related fields, and to form personal judgements and opinions.

3-1 Have the ability to use creative thinking to conduct scientific research, with a strong spirit of innovation and certain creative ability.

3-2 Have consciousness of entrepreneurship and a willingness to explore ways and means of starting a business.

**4. Ability to use knowledge:** Have the ability to solve complex problems, ability to conduct comprehensive analysis and research on complex problems in the field of profession and propose corresponding countermeasures or solutions.

4-1 Have strong search and retrieval skills of Chinese and foreign literature and materials.

4-2 Have strong writing, presentation, demonstration and reporting skills.

4-3 Have ability to integrate industry knowledge and statistical methods to analyse, research and solve practical problems

**5. Ability to use Information:** Have the ability to apply information technology, ability to apply modern information technology tools and instruments appropriately to solve practical problems.

5-1 Have basic knowledge of computers and databases and certain programming skills.

5-2 Be proficient in the use of statistical and other relevant computer software and be able to apply commonly used statistical software to analyse data and give reasonable explanations of socio-economic phenomena.

**6. Communication:** Have strong communication and presentation skills, ability to communicate effectively with peers and the public through verbal and written expressions:

6-1 Have the ability to communicate and express in Mandarin or English.

6-2 Have good professionalism, listen and communicate well in all aspects of work, and have the ability to

communicate research findings clearly and accurately for reporting on work within their area of expertise.

**7. Teamwork:** Have good teamwork skills, ability to work harmoniously and collaboratively with team members and to play an active role in team activities as a member or leader.

7-1 Be a strong team player and have a willingness to share and help others.

7-2 Be able to work with team members or follow arrangements from leadership in the early stages of the job, and after three to five years can lead team members in various tasks.

**8. International Perspective:** Have an international perspective and international understanding. Have an understanding of international developments, concern for global issues, understanding of the differences and diversity of different cultures in the world.

8-1 Have strong listening, speaking, reading and writing skills in English to work with international partners.

8-2 Be able to follow the frontiers of international statistical disciplines, the latest methods, and to follow the latest topical issues in the discipline.

**9. Learning and Development:** Have a sense of lifelong learning and the ability to self-manage and learn independently, and be able to adapt to social and personal sustainable development through continuous learning.

9-1 Have strong independent learning skills and the ability to think independently and update knowledge.

9-2 Have the ability to keep abreast of the times, constantly learn new knowledge required for the job and have good adaptability to new positions, fields and responsibilities.

### **III. Schooling System**

Four years.

### **IV. Length of Study**

Flexible study period, generally four years, the minimum length of flexibility is not less than three years, the longest not more than six years.

### **V. Requirements for Graduation and Degree Conferring**

To graduate, students must complete the minimum number of credits required by the Instructive Cultivation Plan for each category of study and all the content required by the Extracurricular Class, with a total of 155 credits, and a Bachelor of Economics degree if they meet the requirements for the award of a Bachelor's degree.

### **VI. Discipline**

Economics.

### **VII. Core Courses**

Calculus, Linear Algebra, Fundamentals of Probability Theory, Microeconomics, Macroeconomics, Political Economy, Introduction to Statistics, Mathematical Statistics, National Economic Statistics, Applied Multivariate Statistical Analysis, Applied Time Series Analysis, Applied Regression Analysis, Econometrics.

### **VIII. Course Structure and Course Hours (excluding Extracurricular Class)**

<b>Category</b>	<b>Total Credit</b>	<b>%</b>	<b>Total Course Hours</b>	<b>Theory Learning</b>	<b>Practical Training</b>
Public Fundamental Course	36.5	24	720	640	80
General Education	10	6	160	160	0
Professional Fundamental Course	41	26	656	592	64
Professional Course	38	25	608	520	88
Professional Practise	28.5	19	832	0	832
Total	154	100	2976	1912	1064
<b>Theory:Practical (%)</b>	<b>64 : 36</b>				

## IX. Teaching schedule (1)

Category	Type	Provided by	Course Code	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
Public Fundamental Course	required	School of Marxism	b1080001	Basic Principles of Marxism	test	3	48	42	6	Autumn 1
	required	School of Marxism	b1080009	Ethics and the Rule of Law	non-test	3	48	42	6	Autumn 1
	required	School of Marxism	b1080006	Outline of Modern Chinese History	non-test	3	48	42	6	Spring 1
	required	School of Marxism	b1080004	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics I	test	3	48	42	6	Autumn 2
	required	School of Marxism	b1080007	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics II	test	2	32	28	4	Spring 2
	required	School of Marxism	----	Situation and Policy (Modules 1 to 4)	non-test	2	32	28	4	Autumn 1 to Spring 2
	required	School of Marxism	b1080008	Labour Education A	non-test	0.5	16	16		Spring 1
	required	College of Arts and Sciences	b1020018	Academic Chinese	non-test	2	32	32		Autumn 1
	required	College of Physical Education	----	Physical Education I to VI	non-test	3	160	160		Autumn 1 to Autumn 4
	required	Others	b1110003	Military skills	non-test	0.5	2W			Autumn 1
	required	College of Arts and Sciences	b1110002	Military theory	non-test	0.5	32	32		Spring 1
	required	Engineering Training	b1090001	Basic Engineering Training	non-test	2	32		32	Autumn 1
	required	Others	b1110004	Mental Health Education for University Students	non-test	2	32	16	16	Spring 1
	★ Academic English(Select 1 Module for 10 Credits)	Module A	b1020003	General English III	test	3	48	48		Autumn 1
			b1020004	General English IV	test	3	48	48		Spring 1
			b1020005	General Academic English A	test	2	32	32		Autumn 2
			---	English Knowledge Expansion	non-test	2	32	32		Spring 2
		Module B	b1020002	General English II	test	3	48	48		Autumn 1
			b1020003	General English III	test	3	48	48		Spring 1
			b1020006	General Academic English B	test	2	32	32		Autumn 2
			---	English Knowledge Expansion	non-test	2	32	32		Spring 2
		Module C	b1020001	General English I	test	4	64	64		Autumn 1
			b1020002	General English II	test	3	48	48		Spring 1
b1020003			General English III	test	3	48	48		Autumn 2	
★ Academic German		College of Arts and Sciences	b1020040	Academic German I	test	3	48	48		Autumn 1
		College of Arts and Sciences	b1020041	Academic German II	test	3	48	48		Spring 1
		College of Arts and Sciences	b1020042	Academic German III	test	4	64	64		Autumn 2
★ Academic Japanese	College of Arts and Sciences	b1020077	Academic Japanese I	test	3	48	48		Autumn 1	
	College of Arts and Sciences	b1020078	Academic Japanese II	test	3	48	48		Spring 1	
	College of Arts and Sciences	b1020079	Academic Japanese III	test	4	64	64		Autumn 2	
<b>Subtotal (Public Fundamental Course)</b>						<b>36.5</b>	<b>720</b>	<b>640</b>	<b>80</b>	
General Education	selective	Art Education Center	b0----	Aesthetic Education	non-test	2	32	32		Autumn, Spring
	selective	Each College	b0----	Social Sciences and Humanistic Qualities	non-test	4	64	64		Autumn, Spring
				Natural Sciences and Technology Innovation	non-test	4	64	64		Autumn, Spring
<b>Subtotal (General Education)</b>						<b>10</b>	<b>160</b>	<b>160</b>		

(★Note: The first foreign language is 10 credits in total, including 3 languages: Academic English, Academic German and Academic Japanese, choose the appropriate language as required; when Academic English is chosen, please choose the appropriate module in Module A, B, C)

## IX. Teaching schedule (2)

Category	Type	Provided by	Course Code	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended Semester	
Professional Fundamental Course	required	College of Arts and Sciences	b2022113	Calculus A	test	4	64	64		Autumn 1	
	required	College of Arts and Sciences	b2022025	Linear Algebra	test	4	64	64		Autumn 1	
	required	School of Economics and Management	b2022114	Microeconomics	test	3	48	48		Autumn 1	
	required	School of Economics and Management	b2022011	Principles of Accounting	test	2	32	32		Autumn 1	
	required	College of Arts and Sciences	b2022138	Python Language Fundamentals	non-test	3	48	24	24	Spring 1	
	required	College of Arts and Sciences	b2022168	Calculus B	test	4	64	64		Spring 1	
	required	College of Arts and Sciences	b2022116	Fundamentals of Probability Theory	test	4	64	64		Spring 1	
	required	College of Arts and Sciences	b2022117	Introduction to Statistics	test	3	48	32	16	Spring 1	
	required	School of Economics and Management	b2022118	Macroeconomics	test	3	48	48		Spring 1	
	required	School of Economics and Management	b2022119	Political Economy	test	4	64	48	16	Autumn 2	
	required	College of Arts and Sciences	b2022120	Mathematical Statistics	test	3	48	40	8	Autumn 2	
required	School of Economics and Management	b2022034	Finance	test	2	32	32		Autumn 2		
required	School of Economics and Management	b2022121	Finance	non-test	2	32	32		Autumn 3		
<b>Subtotal (Professional Fundamental Course)</b>						<b>41</b>	<b>656</b>	<b>592</b>	<b>64</b>		
Professional Course	required	College of Arts and Sciences	b2022112	the Program of Economic Statistics import	non-test	1	16	16		Autumn 1	
	required	College of Arts and Sciences	b2022029	Operations Research	test	2	32	32		Autumn 2	
	required	College of Arts and Sciences	b2022127	National Economic Statistics	test	2	32	32		Autumn 2	
	required	College of Arts and Sciences	b2022123	Applying multivariate statistical analysis	test	4	64	48	16	Spring 2	
	required	College of Arts and Sciences	b2022124	Applied regression analysis	test	3	48	32	16	Spring 2	
	required	College of Arts and Sciences	b2022125	Sampling techniques and applications	test	2	32	32		Spring 2	
	required	College of Arts and Sciences	b2022130	Business Statistics	non-test	2	32	32		Spring 2	
	required	School of Computer and Information	b2022143	Introduction to Database Systems	non-test	2	32	24	8	Spring 2	
	required	College of Arts and Sciences	b2022126	Applied time series analysis	test	3	48	32	16	Autumn 3	
	required	College of Arts and Sciences	b2022006	Non-parametric statistics	test	2	32	32		Autumn 3	
	required	College of Arts and Sciences	b2022142	Market Research and Market Analysis	non-test	2	32	16	16	Autumn 3	
	required	College of Arts and Sciences	b2022128	Financial statistical analysis	test	2	32	32		Spring 3	
	required	College of Arts and Sciences	b2022018	Data mining	non-test	3	48	32	16	Spring 3	
	required	College of Arts and Sciences	b2022122	Econometrics	test	2	32	32		Spring 3	
	<b>Subtotal(Required Professional Course)</b>						<b>32</b>	<b>512</b>	<b>424</b>	<b>88</b>	
	★ Select different courses in different modules for 6 credits	Module A	College of Arts and Sciences	b2022131	Attribute data analysis	test	2	32	32		Spring 3
b2022003				E-commerce data analysis	non-test	2	32	32		Autumn 4	
b2022007				Risk management	non-test	2	32	32		Autumn 4	
Module B		College of Arts and Sciences	b2022137	Securities Investment Analysis	test	2	32	32		Spring 3	
			b2022132	Experimental design and analysis							
			b2022023	Statistical forecasting and decision making	non-test	2	32	32		Autumn 4	
			b2022167	Advanced Probability Statistics	non-test	2	32	32		Autumn 4	
College of Resources and Environment	b2013025	Introduction to Environmental Engineering	non-test	2	32	32		Autumn 4			
	b2022109	Introduction to Environmental Protection and Sustainability									
<b>Subtotal (Selective Professional Course)</b>						<b>6</b>	<b>96</b>	<b>96</b>			
<b>Subtotal (Professional Course)</b>						<b>38</b>	<b>608</b>	<b>520</b>	<b>88</b>		

### IX. Teaching schedule (3)

Category	Type	Provided by	Course Code	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
Professional Practice	required	College of Arts and Sciences	b4022047	Spss statistical software	non-test	2	48		48	Summer 1
	required	College of Arts and Sciences	b4022048	R Language Fundamentals	non-test	2	48		48	Summer 1
	required	School of Computer and Information Engineering	b4022057	Database technology and applications	non-test	3	72		72	Summer 2
	required	College of Arts and Sciences	b4022014	Excel data processing and analysis	non-test	3	72		72	Summer 2
	required	College of Arts and Sciences	b4022018	Integrated training in social research and statistical analysis	non-test	3	72		72	Spring 3
	required	College of Arts and Sciences	b4000035	the Program of Economic Statistics Innovation and Entrepreneurship	non-test	2	48		48	Spring 3
	required	College of Arts and Sciences	b4020002	Labour Education B	non-test	0.5	16		16	Spring 3
	required	College of Arts and Sciences	b4022053	Python Language and Artificial Intelligence Applications	non-test	3	72		72	Summer 3
	required	College of Arts and Sciences	b4022051	R Advanced	non-test	2	48		48	Summer 3
	required	College of Arts and Sciences	b4022052	Selecting and writing a topic for a statistics paper	non-test	1	24		24	Autumn 4
	required	College of Arts and Sciences	b4022054	Comprehensive training of professional ability	non-test	1	24		24	Spring 4
required	College of Arts and Sciences	b4022028	Economic Statistics Graduation Internship and Graduation Design (Thesis)	non-test	6	288		288	Spring 4	
<b>Subtotal(Professional Practice)</b>						<b>28.5</b>	<b>832</b>		<b>832</b>	
Extracurricular Class	required	Others	b5110001	Extracurricular Class	non-test	1	-	-	-	Autumn, Spring, Summer
<b>Total</b>						<b>155</b>	<b>2976</b>	<b>1912</b>	<b>1064</b>	

#### ★1, Description of Selective Professional Course

**Selective Professional Courses** are divided into modules according to different competency requirements, and students must take one of the modules and achieve the required credits for that module.

**(1). Module A:** Focuses on business statistics and market research in addition to integrated basic competencies.

**(2). Module B:** Focuses on environment statistics, industrial statistics in addition to integrated basic competencies.

#### 2, Explanation of the relevance of professional certificates to the course:

The types and names of vocational qualifications relevant to the profession are as follows.

(1) Issued by the National Bureau of Statistics and the Ministry of Personnel: Junior Statistician Certificate (Certificate of Professional and Technical Qualification in Statistics).

(2) Issued by the National Bureau of Statistics and the Ministry of Education: Junior Survey Analyst (Certificate of Professional and Technical Qualification in Statistics).

(3) Issued by the Ministry of Personnel of the People's Republic of China: Junior Economist Qualification Certificate (Certificate of Professional and Technical Economic Qualification).

(4) China Securities Association: Securities Practitioner's Certificate (a national professional qualification).

(5) China Futures Association: Futures Practitioner Certificate (a national professional qualification).

(6) Issued by the Ministry of Personnel and the Ministry of Finance of the People's Republic of China: Junior Accountant's Certificate (Professional and Technical Accounting Qualification Certificate).

Students will be able to sit for the Technical Qualification Examination in Statistics and obtain the Junior Statistician Certificate through courses such as Introduction to Statistics, Mathematical Statistics, National Economic Statistics, Applied Multivariate Statistical Analysis, Applied Regression Analysis and Applied Time Series Analysis.

Students can take the Introduction to Statistics, Mathematical Statistics, Applied Multivariate Statistical Analysis, Applied Regression Analysis, Applied Time Series Analysis, Sampling Techniques and Applications, and Market Research and Market Analysis to obtain the Junior Survey Analyst qualification.

Students will be able to sit for the Junior Qualifying Examination in Economics and obtain the Junior Economist Certificate through courses such as Political Economy, Microeconomics, Macroeconomics and Econometrics.

Students will be able to sit for the Securities and Futures Qualifying Examination and obtain the Securities and Futures Qualifying Certificate through courses such as Finance, Microeconomics, Macroeconomics and Securities Investment Analysis.

Students will be able to sit for the Professional Technical Accounting Qualification Examination and obtain the Junior Accountant qualification through the Principles of Accounting course.

## X. Prerequisite for Course Study

No.	Course Name	Prerequisite Course	No.	Course Name	Prerequisite Course
1	Calculus B	Calculus A	13	Business Statistics	Introduction to Statistics
2	Fundamentals of Probability Theory	Calculus A	14	Data mining	Applying multivariate statistical analysis
3	Introduction to Statistics	Fundamentals of Probability Theory	15	Market Research and Market Analysis	Introduction to Statistics
4	Macroeconomics	Microeconomics	16	Non-parametric statistics	Mathematical Statistics
5	Finance	Macroeconomics	17	Sampling techniques and applications	Mathematical Statistics
6	Finance	Macroeconomics	18	Experimental design and analysis	Mathematical Statistics
7	National Economic Statistics	Introduction to Statistics	19	Attribute data analysis	Applying multivariate statistical analysis
8	Mathematical Statistics	Introduction to Statistics	20	Financial statistical analysis	Finance Applied time series analysis
9	Applying multivariate statistical analysis	Mathematical Statistics	21	E-commerce data analysis	Applying multivariate statistical analysis to data mining
10	Applied regression analysis	Mathematical Statistics	22	Risk management	Finance Financial statistical analysis
11	Applied time series analysis	Mathematical Statistics Applied regression analysis	23	Securities Investment Analysis	Finance Applied time series analysis
12	Econometrics	Applied regression analysis Applied time series analysis Macroeconomics	24	Statistical forecasting and decision making	Applied regression analysis Applied time series analysis Applying multivariate statistical analysis

## XI. Credit of Extracurricular Class

Through taking extracurricular classes, students are encouraged to take part in academic lectures, social practice activities, campus cultural and sports activities, innovative and entrepreneurial activities, voluntary activities, etc. to improve their social adaptability and enhance the competitiveness in the job market. Details are specified in Students' Manual.