

100221118 Applied Econometrics and Statistics Software

1. 课堂讲授学时 **Lecture Hours: 24**
2. 课堂实验学时 **Laboratory Hours: 8**
3. 课下研讨学时 **Colloquia Hours**
4. 学生课下投入学时 **Individual Study Hours: 32**
5. 学分 **Credits: 2**
6. 开课学年学期（如果有强制性的要求则必须填，否则可以不填） **Occurrence: Summer Course**
7. 先修课程 **Prerequisite(s): Probability and mathematical statistics 100172003**
8. 课程概要 **Course Description:** This international summer course is designed to bridge the gap between econometric theory and empirical research using Stata and R. This course, based on the theoretical study of econometrics and statistics, is to explore to use econometrics and statistical software to actual data and model analysis, and discusses how to use statistical software to quantitatively describe the relationship between economic variables. Moving beyond basic software commands, the course adopts a Project-based Learning approach with “Dual-Instructor” model, i.e., the local faculty teaches theoretical and technical foundation, while foreign expert lead workshops focused on frontier economic issues. This course uses software (STATA and R language) to master the methods of establishing, estimating, testing, and predicting econometric models, and learns to use econometric models to deal with actual economic problems and empirical analysis.
9. 课程预期学习成果 **Course Outcomes:**

By the end of successful completion of this course, the student will be able to:

 - (1) further understand econometric theories;
 - (2) design a proper model to describe the relationship among economic variables;
 - (3) develop the ability of using software and AI tools to analyze empirical problems;
 - (4) understand the economic phenomenon.
10. 教学内容与学时分配 **Course Content, Laboratories and Laboratory Hours**（有则填，没有则不填），**Colloquia Hours**（有则填，没有则不填）：

Lectures and Lecture Hours:

1. Stata/R software introduction and Basic analysis
- 1.1 Introduction to statistical software
- 1.2 Stata/R window interface and installation

1.3 Data import	
1.4 Basic statistics	
1.5 Statistics analysis using Stata/R	
Hamilton Ch1~2; Chen Qiang a Ch2~3	
2. Project 1 (part 1): Economic Growth Analysis (Foreign Expert):	3
2.1 Growth Models with Exogenous Saving	
2.2 Growth Model with Consumer Optimization (the Ramsey Model)	
Romer Ch1~2	
3. Linear regression analysis 1	2
3.1 OLS regression method	
3.2 Stata performs least squares regression	
3. 3 Examples	
3.4 Project 1.discussion	
Hamilton Ch6; Chen Qiang a Ch4	
4. Project1 (Part 2): Economic Growth Analysis	2
4.1 in-class presentation and foreign teacher's Commnets	
5. Linear regression analysis 2	2
5.1 OLS estimation test	
5.2 Stata commands and examples for hypothesis testing	
Hamilton Ch6; Chen Qiang a Ch4	
6. Linear regression analysis 3	2
6.1 Dummy variable model	
6.2 Stepwise regression	
6.3 Stata operation	
Hamilton Ch6; Chen Qiang a Ch9	
6. Project2 (Part1): Unemployment and Inflation	3
Handout	
7. Binary selection model	2
7.1 Binary selection model	
7.2 Stata commands and examples of the binary selection model	
Hamilton ch10; Chen Qiang a ch11	
8. Instrumental Variable Method	2
8.1 Instrumental variable method	
8.2 Two-stage least squares method	
8.3 Hausmann test	
8.4 Stata commands and examples of instrumental variable method	

Chen Qiang a Ch10

9. Project 2 (Part 2): Unemployment and Inflation 2
9.1 in-class presentation and foreign teacher's Comments

10. Panel Data Model 2
10.1 Panel Data Model
10.2 Fixed effects model
10.3 Random effects model
10.4 Fixed effect and random effect selection
10.5 Stata commands and examples of panel data

Chen Qiang a Ch12

11. Project 3 (Part 1): Systemic Financial Risk Measurement 3
Handout

12. Robust regression 2
12.1 Robust regression
12.2 Quantile regression
12.3 Stata operation for robust regression
Hamilton Ch9

13. Project 3 (Part 2): Systemic Financial Risk Measurement 2
13.1 in-class presentation and foreign teacher's Comments
13.2 Discussion.

11. 考核与成绩评定 Grading:

Attendance: 15%

Inclass Quizzes: 25%

Group Presentation: 60%

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12. 教材, 参考书 **Text & Reference Book:** 作者, 书名, 版本, 年份, 国际标准书号 ISBN

[1]. Lawrence C. Hamilton, Statistics with STATA, Thomson.

[2]. 陈强 a 《计量经济学及 STATA 应用》 2015 高等教育出版社。

[3]. 陈强 b 《高级计量经济学及 Stata 应用》 第二版 2014 年 高等教育出版社。

[4]. Jeffrey M. Wooldridge Introductory Econometrics A Modern Approach 5th edition
2012, South-Western Cengage Learning.

[5]. Christian Kleiber, Achim Zeileis. Applied Econometrics with R, 2008
Springer.

[6]. 罗伯特·J. 巴罗、夏威尔·萨拉-伊-马丁、夏俊 译 《经济增长》 格致出版舍 2025

年 09 月 (ISBN : 9787543234444)。

13. 编写教师 Course Lecturer:

霍丽娟

编写教师 Course Lecturer (签字):
