ECON 042: Econometrics

Term: 2020 Summer Session **Instructor: Staff** **Language of Instruction: English** **Classroom: TBA** **Office Hours: TBA**
Class Sessions Per Week: 5 **Total Weeks: 5** **Total Class Sessions: 25** **Class Session Length (minutes): 120** **Credit Hours: 4**

Course Description:

Econometrics is about statistical analysis of economic data. This course will introduce both theory and practice of econometrics.We will begin on reviewing essential concepts from probabilities and statistics. Then emphasis will be laid on regression analysis including the meaning and properties of both single and multivariate regression. Student will develop ability on how to do estimation and hypotheses testing using real datasets and an econometrics software package(i.e.STATA). Regression on panal data, binary response, instrumental variables, and time series will also be introduced.

This course requires students to devote significant space to empirical applications in economics and related fields through hand-on experience. Upon completion students are expected to develop ability on analyzing economic phenomena under empirical data sets and implementing econometrics software.

Prerequisite: ECON 011, ECON 012, MATH 026 and STAT 021

Course Materials:

James H. Stock, Mark W. Watson. ***Introduction to Econometrics*** *[3rd ed. update]*. Pearson, 2015, ISBN: 978-0-13-348687-2

Software packages:

The most popular software for econometrics is STATA. So it is quite recommended. There are

many online guidelines about STATA. Student can have a brief review on these user's guideline in order to be more proficient in the class.

Course Format and Requirements:

This course is a combination of lecture and practice in computer lab. Students are encouraged to do self-study or homework assignment in excel or STATA after class. Students are strongly recommended to do research on the web and review more literature for research paper.

Attendance:

Attendance will not be taken but is strongly recommended. Each student will have three allowed absences and no grade deduction will be made for the first three absences. More than three unexcused absences will result in an automatic reduction in your participation grade, for instance from A- to B+. Your active participation in the class is expected and encouraged.

Grading Scale:

A+: 98%-100%
A: 93%-97%
A-: 90%-92%
B+: 88%-89%
B: 83%-87%
B-: 80%-82%
C+: 78%-79%
C: 73%-77%
C-: 70%-72%
D+: 68%-69%
D: 63%-67%
D-: 60%-62%
F: Below 60%

Course Assignments:

Problem Sets:

There are five problem sets. Problem sets intend to help students practice problems under the

excel or STATA. Students should finish topic-related problem sets before due date. All problem sets will be closely related to topics mentioned in class.

Research Paper:

An empirical research paper is due at the end of the term. There will be preliminary assignments prior to the final due date to encourage you to define your research question, identify the data you will use in the analysis, and report your progress. You will also make a presentation to the class about your paper.

More detailed instructions and requirements about this research paper will be released in the first week of the session.

Exams:

Midterm Exam

There will be two midterm exams in this course. The midterm exam will be based on concepts covered in class. It will be in-class, close-book and non-cumulative.

Final Exam

The final will be cumulative and close-book. Note that the final will not be taken during the normal class times. Exact time and location for final will be announced later.

Course Assessment:

Problem Sets	15%
Research Paper	20%
Midterm 1	20%
Midterm 2	20%
Final Exam	25%
Total	**100%**

Academic Integrity:

Students are encouraged to study together, and to discuss lecture topics with one another, but all other work should be completed independently.

Students are expected to adhere to the standards of academic honesty and integrity that are described in the Shanghai Normal University's Academic Conduct Code. Any work suspected of violating the standards of the Academic Conduct Code will be reported to the Dean's Office.

Penalties for violating the Academic Conduct Code may include dismissal from the program. All students have an individual responsibility to know and understand the provisions of the Academic Conduct Code.

Special Needs or Assistance:

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.

Course Schedule:

- Note: Not all topics in the chapter will be covered.The instructor reserves the right to add or omit some sections as the course proceeds.

Week	Topics	Activities
Week 1 (Class 1-5)	Course syllabus and course instroduction Economics Questions and Data (Chapter 1) Review of Probability and Statistics (Chapter 2,3) Linear Regression with One Regressor (Chapter 4)	- Computer Lab - Problem Set 1 - Research Paper Instruction
Week 2 (Class 6-10)	The Theory of Linear Regression with One Regressor (Chapter 17) Linear Regression with a Single Regressor: Hypothesis Tests and Confidence Intervals (Chapter 5) Linear Regression with Multiple Regressor (Chapter 6) The Theory of Multiple Regression (Chapter 18)	- Computer Lab - Problem set 2 - Midterm exam 1

Week 3 (Class 11- 15)	Hypothesis Tests and Confidence Intervals in Multiple Regression (Chapter 7) Nonlinear Regression Functions (Chapter 8) Assessing Studies Based on Multiple Regression (Chapter 9)	- Computer Lab - Problem Set 3 - Research Paper Check Point 1
Week 4 (Class 16-20)	Regression with Panal Data (Chapter 10) Regression with a Binary Dependent Variables (Chapter 11) Instrumental Variables Regression (Chapter 12)	- Computer Lab - Problem Set 4 - Midterm exam 2 - Research Paper Check Point 2
Week 5 (Class 21-25)	Experiments and Quasi-Experiments (Chapter 13) Introduction to Time Series Regression and Forecasting (Chapter 14) Estimation of Dynamic Causal Effects (Chapter 15) Review for final	- Problem set 5 - Research Paper Presentation and Final Deliverable - Final exam